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Waste Minimization
Hazardous and Non-Hazardous
Solid Waste (1980 to Present)

(U.S.) Environmental Protection Agency
Washington, DC

Sep 87

U.S. Department of Commerce
National Technical Information Service
NTIS

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This bibliography was compiled to promote waste minimization and to improve access to current source reduction and recycling information.

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WASTE MINIMIZATION:

HAZARDOUS AND NON-HAZARDOUS SOLID WASTE

SEPTEMBER 1987

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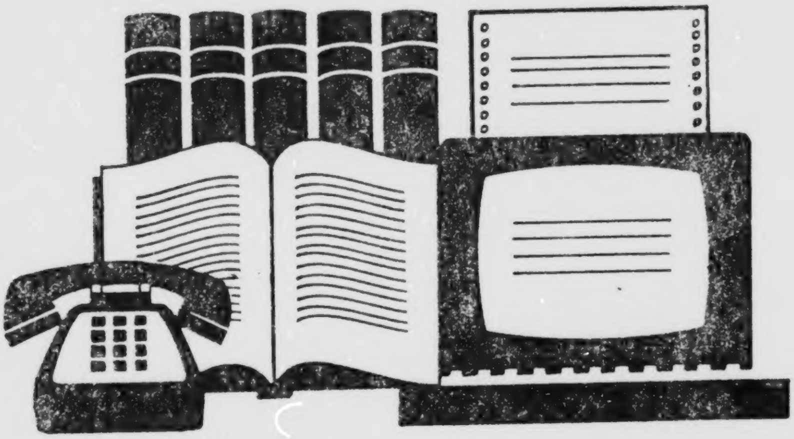

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INTRODUCTION

The minimization of hazardous and non-hazardous solid waste has become an increasingly important topic in recent years. More and more, people are becoming concerned that this country's landfills are nearing capacity, and that hazardous and non-hazardous solid wastes pose a severe threat to human health and the environment. Federal, State, and local governments have been grappling with methods for minimizing wastes through source reduction and recycling.

Waste Minimization Hazardous and Non-Hazardous Solid Waste was compiled with assistance from EPA's Office of Solid Waste in support of the overall Agency strategy to promote waste minimization and to improve access to current source reduction and recycling information. The bibliography, which also reflects current interest in used oil, includes citations from journal articles, books, government reports and bibliographies, conference proceedings, scientific and technical papers, and speeches.

Citations were selected for their relevance to EPA information needs. The bibliography is divided into sections on Hazardous Waste, Used Oil, and Non-Hazardous Solid Waste. There are five appendices that provide sources of additional information: State Programs Supporting Waste Minimization; EPA Regional Waste Minimization Contacts; Associations; Waste Exchanges; and Recycling Periodicals. A number of the citations include information on several of the above sections. Rather than duplicate the citations, they were categorized according to the main thrust of the article and EPA program interests.

Most categories include citations from 1980 to the present. A listing of non-hazardous solid waste citations pre-dating 1980 will be published separately. It is titled Waste Minimization: Non-Hazardous Solid Waste Retrospective (1970-1979). The Background category in the Hazardous Waste section provides general information on aspects of hazardous waste minimization. In the International Aspects categories, only information from 1984 to the present was included because of the great amount of information found. For the same reason, the Waste-to-Energy category includes only information from 1985 to the present. Contributions of a number of citations were made by some States, not only of reports and bibliographies from their own programs, but of programs they have found valuable.

Following are definitions of key hazardous waste minimization terms taken from EPA's Report to Congress: Minimization of Hazardous Waste, October 1986 :

SOURCE REDUCTION - refers to the reduction or elimination of waste generation at the source, usually within a process. Source reduction implies any action that reduces the amount of waste exiting from a process.

RECYCLING - refers to the use or reuse of a waste as an effective substitute for a commercial product, or as an ingredient or feedstock in an industrial process. It also refers to the reclamation of useful constituent fractions within a waste material or removal of contaminants from a waste to allow it to be reused.

WASTE MINIMIZATION - means the reduction, to the extent feasible, of hazardous waste that is generated or subsequenbtly treated, stored, or disposed of. It includes any source reduction or recycling activity undertaken by a generator that results in either (1) the reduction of total volume or quantity of hazardous waste, or (2) the reduction of toxicity of hazardous waste, or both, so long as the reduction is consistent with the goal of minimizing present and future threats to human health and the environment.

This bibliography was prepared in the EPA Headquarters Library by Sheila Richard, Reference Librarian. Arthur Berger, Information Management Specialist, provided research and organizational assistance.

The source of each abstract is noted by an alphabetic code enclosed in parentheses at the end of the entry, unless otherwise indicated in the citation. The code abbreviations are listed below:

(CA) California Department of Health Services
Alternative Technology Section
744 P Street
P.O. Box 942732
Sacramento, CA 94234-7320

(COM) Compendex
Engineering Information, Inc.
345 East 47th Street
New York, NY 10017

(CPI) Conference Papers Index
Cambridge Scientific Abstracts
5161 River Road
Bethesda, MD 20816

(EA) Encyclopedia of Associations
Gale Research Co.
Book Tower
Detroit, MI 48226

(EGY) Energyline
EIC/Intelligence, Inc.
292 Madison Ave.
New York, NY 10017

(ENV) Enviroline
Environment Information Center, Inc.
292 Madison Ave.
New York, New York 10017

(NC) Pollution Prevention Pays Program
Division of Environmental Management
North Carolina Department of Natural
Resources and Community Development
P.O. Box 27611
Raleigh, NC 27611

(NTIS) National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

(MN) Minnesota Technical Assistance Program
W-140 Boyton Health Service
University of Minnesota
Minneapolis, MN 55455

(POL) Pollution Abstacts
Cambridge Scientific Abstracts
5161 River Road
Bethesda, MD 20816

(TRIS) U.S. Department of Transportation and
Transportation Research Board
2101 Constitution Ave. N.W.
Washington, DC 20590

(ULR) Ulrich's International Periodicals Directory
R.R. Bowker
1180 Avenue of the Americas
New York, NY 10036

The library staff thanks the Waste Minimization staff within the Office of Solid Waste for advice and direction in the development of this bibliography. The library staff and the Waste Minimization staff will collaborate in producing future updates. A sample form has been included at the end of the bibliography for suggested publications to be included in the updates.

For further information contact:

EPA Headquarters Library PM-211A
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401 M Street, N.W. Room 2904
Washington, DC 20460
(202) 382-5922

This bibliography is printed on recycled paper.

I. HAZARDOUS WASTE

BACKGROUND

Minnesota Technical Assistance Programs - Bibliography on Waste Reduction
Minnesota Technical Assistance Program, July 1987

Minnesota Technical Assistance Program (MnTAP), a program of the Minnesota Waste Management Board, developed a bibliography which contains the most current accumulated waste management articles and publications in Minnesota.
[MN]

Pollution Prevention: A Bibliography by Industrial Category
Hunt, G.; Schecter, R.
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina 146pp March 1987

The bibliography includes more than 1,800 articles, reports, conference proceedings and other publications on multi-media waste reduction techniques. References are organized by twenty-four industrial categories. The bibliography is updated and published annually.
[NC]

Minimization of Hazardous Waste Generation
Hunt, G.; Schecter, R.
In: Standard Handbook for Hazardous Waste Treatment and Technology. H. Freeman (ED.) McGraw-Hill, New York. 1987 (in Print)

Specific and detailed discussion of waste minimization techniques is presented with actual industrial examples documenting reduction and payback. A section is included illustrating how to develop and implement an on-going waste reduction plan for an industrial facility.
[NC]

1232274 PB87-114336/XAB

Minimization of Hazardous Waste. Executive Summary and Fact Sheet (Report to Congress (Final))

Environmental Protection Agency, Washington, DC. Office of Solid Waste.
Corp. Source Codes: 031287518
Report No.: EPA/530/SW-86/033A
Oct 86 167p
See also PB87-114344.
Also available in set of 5 reports PC E99, PB87-114328.
Languages: English
NTIS Prices: PC A08/MF A01 Journal Announcement: GRAI8707
Country of Publication: United States

The report to Congress (RTC) on Waste Minimization which was prepared in response to the requirements of Section 8002(r) of the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA). Under this section, the Administrator of the EPA is required to submit a RTC on the desirability and feasibility of: (1) Establishing standards of performance or of taking other additional actions under RCRA to require generators of hazardous waste to reduce the volume or quantity and toxicity of the hazardous waste they generate; and (2) Establishing, with respect to hazardous waste, required management practices or other requirements to ensure such wastes are managed in ways that minimize present and future risks to human health and the environment. [NTIS]

1232276 PB87-114351/XAB

Waste Minimization Issues and Options. Volume 1

(Report to Congress (Final))
Versar, Inc., Springfield, VA.
Corp. Source Codes: 060372000
Sponsor: Jacobs Engineering Group, Inc., Pasadena, CA.; Environmental Protection Agency, Washington, DC. Office of Solid Waste.
Report No.: EPA/530/SW-86/041
Oct 86 402p
See also PB87-114344 and PB87-114369. Prepared in cooperation with Jacobs Engineering Group, Inc., Pasadena, CA. Sponsored by Environmental Protection Agency, Washington, DC. Office of Solid Waste.
Also available in set of 5 reports PC E99, PB87-114328.
Languages: English
NTIS Prices: PC A18/MF A01 Journal Announcement: GRAI8707
Country of Publication: United States
Contract No.: EPA-68-01-7053

The report has three primary objectives: (1) to identify waste minimization practices in the United States by major industry processes and by major waste stream; (2) to identify factors that promote and inhibit the adoption of waste minimization practices by industry; and (3) to identify

strategies by which waste minimization can be increased. The report also serves as a resource document on waste minimization for Federal and State programs industries, and the general public. It must be noted that this study approval has the objectives stated above in an exploratory manner because of the size, diversity, and complexity of the subject.
[NTIS]

1232277 PB87-114369/XAB
Waste Minimization Issues and Options. Volume 2
(Report to Congress)
Versar, Inc., Springfield, VA.
Corp. Source Codes: 060372000
Sponsor: Jacobs Engineering Group, Inc., Pasadena, CA.; Environmental Protection Agency, Washington, DC. Office of Solid Waste.
Report No.: EPA/530/SW-86/042
Oct 86 704p
See also PB87-114351 and PB87-114377. Portions of this document are not fully legible. Prepared in cooperation with Jacobs Engineering Group, Inc., Pasadena, CA. Sponsored by Environmental Protection Agency, Washington, DC. Office of Solid Waste.
Also available in set of 5 reports PC E99, PB87-114328.
Languages: English
NTIS Prices: PC E99/MF E04 Journal Announcement: GRAI8707
Country of Publication: United States
Contract No.: EPA-68-01-7053

The report is a supplement to Waste Minimization - Issues and Options Volume I. It contains a description of data bases used in the study and contains 22 exploratory studies of various industrial processes and practices known to generate or influence the generation of hazardous wastes and their source reduction practices. The UST of the analyzed processes and practices include: Acrylonitrile Manufacture; Agricultural Chemicals Formulation; Electroplating; Epichlorohydrin Manufacture; Inorganic Pigments Manufacture; Metal Surface Treatment; Organin Dyes and Pigments; Paint Manufacturing; Petroleum Refining; Phenolic Resins Manufacture; Printed Circuit Boards; Printing Operations; Synthetic Fiber Manufacture; Synthetic Rubber Manufacture; 1,1,1 - trichloroethane, trichloroethylene/perchloroethylene; Vinyl Chloride Monomer; Wood Prowerving; good operating practices, metal parts cleaning; paint application; and process equipment cleaning.
[NTIS]

1232278 PB87-114377/XAB
Waste Minimization Issues and Options. Volume 3
(Report to Congress (Final))
Versar, Inc., Springfield, VA.
Corp. Source Codes: 060372000
Sponsor: Jacobs Engineering Group, Inc., Pasadena, CA.; Environmental Protection Agency, Washington, DC. Office of Solid Waste.
Report No.: EPA/530/SW-86/043
Oct 86 278p
See also PB87-114369. Prepared in cooperation with Jacobs Engineering Group, Inc., Pasadena, CA. Sponsored by Environmental Protection Agency, Washington, DC. Office of Solid Waste.

Also available in set of 5 reports PC E99, PB87-114328.
Languages: English
NTIS Prices: PC A13/MF A01   Journal Announcement: GRAI8707
Country of Publication: United States
Contract No.: EPA-68-01-7053

The report is a supplement to Waste Minimization - Issues and Options Volume I. It contains the following information: (1) Recycling technologies and practices; (2) A description of the Northeast Industrial Waste Exchange's on-line computer system; (3) Conducting a project profitability analysis; (4) EPA's definition of Solid Waste; (5) EPA correspondence on Waste Minimization activities; (6) Compilation of industrial waste reduction cases; (7) EPA's environmental auditing policy statement; (9) Descriptions of State programs; and (10) Two proposed regulations on hazardous waste management by two counties in California.
[NTIS]

86-08319
Serious reduction of hazardous waste. Summary
Publ.Yr: 1986
U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, DC (USA)
SUMMARY LANGUAGE - ENGLISH; GPO Stock No. 052-003-01048-8.
Languages: ENGLISH

Waste reduction is an economically sensible response to what many people see as a hazardous waste crisis. Several thousand pounds of hazardous waste are generated annually for every person in the Nation. Many thousands of people have lost their drinking water because of contamination by toxic waste. Across the country there are thousands of sites contaminated by hazardous waste that require billions of dolars for cleanup. An increasing number of lawsuits are being brought by people who claim to have suffered adverse health effects from living near toxic wate sites. Also the number of lawsuits being instituted by the government is mounting rapidly. These suits claim that certain waste generators have not complied with regulations and that generators who have used waste management facilities now on the Superfund list must pay for cleanups.
[POL]

80-06285
The handbook of hazardous waste management.
Metry, A. A.
IU Conversion Systems, Inc., Research and Technical Services, Horsham, PA 19044
Publ.Yr: 1980
Publ: Westport, CT   Technomic Publishing Company
illus.   numerous refs.
No abs.   Price: $45

Languages: ENGLISH
Doc Type: BOOK

The RCRA authorizes federal and state agencies to regulate waste disposal. The development of waste management programs should depend on the waste composition, volume, and economic factors resulting in various programs of recycling; removal of toxic or hazardous components, volume reduction, chemical, thermal, or biological conversion; burial of toxic wastes in secure landfills; and burial of detoxified wastes in sanitary landfills. Proper waste management emphasizes environmental pollution reduction. Information is presented on regulations, transportation control, physical, chemical, and biological treatment, incineration, land disposal facilities, ocean dumping, and comprehensive waste management. (FT)
[POL]

SOURCE REDUCTION

The Paint Industry Audit Manual (SIC* 2851)
California Department of Health Services, 714/744 P Street, Sacramento,
CA 95814
California Waste Reduction Audit Program, July 1987

This manual for small quantity hazardous waste generators is written by a consultant experienced with the specific industry. To prepare the manual, the consultant performs waste minimization audits for three to six selected companies in the industry. The document includes a description of hazardous waste management in the industry as well as a waste reduction self-audit checklist for use by other companies in the industry.
[CA]
*SIC = Standard Industrial Code

Circuit board manufacturers Audit Manual (SIC* 3670, 3674, and 3679)
California Department of Health Services, 714/744 P Street, Sacramento,
CA 95814
California Waste Reduction Audit Program, August 1987

This manual for small quantity hazardous waste generators is written by a consultant experienced with the specific industry. To prepare the manual, the consultant performs waste minimization audits for three to six selected companies in the industry. The document includes a description of hazardous waste management in the industry as well as a waste reduction self-audit checklist for use by other companies in the industry.
[CA]
*SIC = Standard Industrial Code

Automotive repairs Audit Manual (SIC* 7538 and 7539)
California Department of Health Services, 714/744 P Street, Sacramento,
CA 95814
California Waste Reduction Audit Program, August 1987

This manual for small quantity hazardous waste generators is written by a consultant experienced with the specific industry. To prepare the manual, the consultant performs waste minimization audits for three to six selected companies in the industry. The document includes a description of hazardous waste management in the industry as well as a waste reduction self-audit checklist for use by other companies in the industry.
[CA]
*SIC = Standard Industrial Code

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HW2

Automotive paint shops Audit Manual (SIC* 7535)
California Department of Health Services, 714/744 P Street, Sacramento, CA 95814
California Waste Reduction Audit Program, June 1987

This manual for small quantity hazardous waste generators is written by a consultant experienced with the specific industry. To prepare the manual, the consultant performs waste minimization audits for three to six selected companies in the industry. The document includes a description of hazardous waste management in the industry as well as a waste reduction self-audit checklist for use by other companies in the industry.
[CA]

*SIC = Standard Industrial Code

Pollution Reduction Strategies in the Fiberglass Boatbuilding and Open Mold Plastics Industry
Davis, D.; Lao, Y.J.
East Carolina University
Raleigh, North Carolina 117pp 1987

Pollution reduction strategies for the fiberglass boatbuilding and open mold plastices industry are discussed along with environmental regulations that apply to the industry. Case studies are presented to illustrate the various strategies, both production-based, e.g., air-assisted, airless spray guns, and facility-based, e.g., controlling air-flow and exhaust.
[NC]

Guide to solvent waste reduction alternatives
ICF Consulting Assoc., Inc.
Prepared for California Department of Health Services, Alternative Technology Section, 714/744 P Street, Sacramento, CA 95814, October 1986

This analysis of solvent waste minimization primarily focuses on in-plant changes (source reduction) that could be implemented to reduce or eliminate the generation of solvent waste. Source reduction options are described for parts cleaning, equipment cleaning, coating application and solvent air emission of paramount importance in discrete operations and is described separately. The secondary focus is on recycling and treatment operations. Related regulatory background is described separately.
[CA]

Pollution Prevention Techniques for the Wood Preserving Industry
Duke University
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina 40pp June 1986

An overview of the wood preserving industry and options for waste reduction in production process and chemicals handling is provided.
[NC]

Hospital and Laboratory Waste Reduction Strategies
Thomas, WR; Tulis W.
Duke University and University of North Carolina-Chapel Hill
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina 80pp September 1987

Compilation of waste reduction strategies and their application in hospital and commercial testing laboratories is presented with examples. Developed as a handbook based on several workshops carried out in North Carolina.
[NC]

Waste Reduction Options: Radiator Service Firms
Hunt, G.
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina 8pp May 1987

An overview is provided on sources and types of wastes from radiator service firms which is keyed to various waste reduction options.
[NC]

Solvent Waste Reduction Alternatives Symposia
Produced by ICF Consulting Assoc., Inc.
Sponsored by the California Department of Health Services, Alternative Technology Section, 714/744 P Street, Sacramento, CA 95814
Symposia held Oct 20-21,1986, Santa Clara, CA, and Oct 23-24, 1986, Los Angeles, CA

Proceedings provide practical tools to assist industry in: (1) complying with applicable regulations; (2) developing and implementing an overall solvent waste minimization strategy, including conducting waste audits; (3) identifying cost-effective onsite and offsite solvent waste reduction alternatives; (4) minimizing liabilities; and (5) understanding present and planned government solvent waste program objectives.
[CA]

0187800 *87-012156
ENVIRONMENTAL CONTROL
VERVALIN C. H.
HYDROCARBON PROCESSING-INTL, OCT 86, V65, N10, P41(6)

JOURNAL ARTICLE TOPICS PERTINENT TO ENVIRONMENTAL CONTROL AND MANAGEMENT IN THE HYDROCARBON PROCESSING INDUSTRIES ARE ADDRESSED. A MAJOR PROBLEM IN THIS SECTOR IS DEVELOPMENT OF ALTERNATIVES TO THE INCINERATION OF HAZARDOUS WASTES. THE POTENTIAL FOR WASTE REDUCTION AND RECYCLING IS EXPLORED, AS ARE LIMITATIONS INHERENT IN THE DEEP-WELL INJECTION OF SUCH WASTES. AN INTEGRATED APPROACH TO WASTEWATER TREATMENT IS INTRODUCED, AS ARE GUIDELINES FOR CONDUCTING EFFECTIVE ENVIRONMENTAL AUDITS. TECHNOLOGICAL REMEDIES ARE RECOMMENDED FOR TANK EMISSION LOSSES, CONTAMINATED SOILS, STORM WATER RUNOFF, AND BIOTREATMENT OF AMMONIA AND SULFIDE.
[ENV]

0187988 *87-012344
IMPROVED HAZARDOUS WASTES MANAGEMENT NEEDS,
CHEMICAL ENGINEERING PROGRESS, SEP 86, V82, N9, P29(6)

JOURNAL ARTICLE MORE REALISTIC ESTIMATES OF THE TOTAL VOLUME OF SOLID WASTES GENERATED THAT CONTAIN HAZARDOUS CONSTITUENTS HAVE CREATED RENEWED INCENTIVES FOR IMPROVED TECHNOLOGY TO MANAGE THOSE WASTES. OF ALL HAZARDOUS WASTES, 96% IS MANAGED ON-SITE, AND 4% OFF-SITE. WITH RESPECT TO DISPOSITION, 67% IS TREATED, 51% STORED, 20% DISPOSED, AND 4% RECYCLED. ALTERNATIVES TO LANDFILL AND IMPOUNDMENT DISPOSAL ARE BEING SOUGHT, AND RESEARCH IS FOCUSING ON WASTE REDUCTION, SEPARATION AND CONCENTRATION OF HAZARDOUS CONSTITUENTS, WASTE EXCHANGES, NEW TREATMENT TECHNOLOGY, AND ENERGY/MATERIALS RECOVERY.
[ENV]

86-08449
Hazardous waste minimization planning at the Army Material Command (AMC)
Boardman, G.D. (ed.); McCarthy, J.J.; Newsome, R.E.; Hasselkus, W.N.
Army Mater. Command, Environ. Qual. Div., Alexandria, VA, USA
18. Mid-Atlantic Industrial Waste Conference Blacksburg, VA (USA) 29 Jun-1 Jul 1986
18. MID-ATLANTIC INDUSTRIAL WASTE CONFERENCE pp. 508-520, Publ.Yr: 1986
TECHNOMIC PUBLISHING COMPANY, LANCASTER, PA (USA)
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

The Army Material Command (AMC) is the Army's industrial command. It's mission is to support the soldier and the total Army. In fiscal 1985 it processed over 5 million requisitions, and overhauled or repaired 542,000 pieces of equipment at its maintenance depots and repair facilities. In September 1985, the AMC Commanding General directed his Engineer to develop an action plan to consolidate, expand, and support hazardous waste (HW) reduction efforts that AMC installations were employing. The AMC Hazardous Waste Minimization (HAZMIN) Plan outlines the actions AMC will take to reduce its HW and how it will manage the HW it does generate.
[POL]

0186658 *87-003613
PROCESS MODIFICATIONS AND NEW CHEMICALS,
BURCH WILLIAM M.
EPA, DC,
CHEMICAL & ENGINEERING PROGRESS, APR 86, V82, N4, P5(4)

JOURNAL ARTICLE PROCESS MODIFICATION IS AN APPROACH CRITICAL IN REDUCING POTENTIAL RISKS ASSOCIATED WITH THE PRODUCTION AND USE OF NEW CHEMICALS. WITH RESPECT TO NEW CHEMICAL PRODUCTION, PROCESS MODIFICATIONS MAY REDUCE THE PRESENCE OF HAZARDOUS MATERIALS, POTENTIAL EXPOSURES TO SUCH MATERIALS, AND THE AMOUNT OF WASTE FOR DISPOSAL. THIS CAN BE ACCOMPLISHED BY CHANGING THE DESIGN OF THE PRODUCT OR EMPLOYING DIFFERENT ROUTES OF SYNTHESIS WHICH PRECLUDE BYPRODUCT FORMATION. THE EFFECTIVENESS OF ANY PROCESS CHANGE TO REDUCE RELEASES AND EXPOSURES CAN BEST BE ASSESSED THROUGH THE USE OF MONITORING DATA IN ENGINEERING ANALYSES.
[ENV]

20

Identification and Reduction of Pollution Sources in Textile Waste Processing
Smith, B.
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina 129pp 1986

Information is compiled on methods to reduce waste generation and effluent toxicity by textile mills. Overviews of available technologies and case studies are used to document cost-effective waste reduction techniques.
[NC]

20
Pollution Prevention Techniques for Clinical and Research Laboratories
Feild, R.A.
Duke University
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina 76pp September 1986

A compilation of waste reduction techniques is provided which can be used by laboratories to reduce generation of waste. Information is included on simple and economic techniques such as product substitution, materials recovery, neutralization and detoxification, and recycling.
[NC]

87-00925
The case for stopping wastes at their source
Martin, L.
Hazardous Waste Minimization Project, Inst. Local Self-Reliance
ENVIRONMENT VOL. 28, NO. 3, pp. 35-37, Publ.Yr: 1986
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Improved industrial profitability has traditionally appeared to be at odds with improved environmental quality. These two objectives can be combined, surprisingly, when industries implement waste-minimizing strategies. Hazardous-waste source reduction is a concept and practice that goes by many names. Some of the more common ones include pollution prevention, low- and non-waste technology, source or waste reduction, and waste minimization. The goal is elimination of the manufacturing by-products that must be treated as waste. The objectives are to avoid the inefficiency in production that results in wasted resources, and to minimize the emission of by-products to the environment. Waste minimization alleviates disposal costs, liability risk, and resource costs. Clearly, the result is a reduced insult and burden on the natural environment and an increased profitability for business. Waste, after all, is only a misused and misplaced resource.
[POL]

86-02218
Cutting chemical wastes
Sarokin, D.; Muir, W.R.; Miller, C.G.; Sperber, S.
Address not stated
Publ.Yr: 1986
INFORM, INC., NEW YORK, NY (USA)
Languages: ENGLISH

This book provides an in-depth study to examine what the organic chemical industry is doing to reduce its output of hazardous wastes at their source. It presents answers to these questions: What are the organic chemical industry's options for reducing hazardous wastes? Do government regulations provide incentives or obstacles to hazardous waste reduction? Is waste reduction a money-saver or a financial hardship? The study includes 29 case studies of organic chemical plants run by both large, well-known companies that dominated the industry, such as DuPont, Exxon, and CIBA-GEIGY, and smaller plants that are usally overlooked by environmental regulators. Each company is examined in detail for waste reduction practices in five areas: process changes, product changes, chemical substitutions, use of new or modified equipment, and changed procedures for handling chemicals.
[POL]

224
Department of Defense study of industrial processes to reduce hazardous waste
Higgins, T.E.; Desher, D.P.
Defense Environmental Leadership Project, Washington, D.C.
Presented at the National Conference on Hazardous Waste and Hazardous Materials, 1986

Cases of industrial process modifications in paint stripping, solvent cleaning, and metal plating are evaluated, including resource recovery and recycling, source separation, material substitution, and improved housekeeping.
[MN]

87-02222
Industrial waste reduction: The process problem
Valentino, F.W.; Walmet, G.E.
ENVIRONMENT VOL. 28, NO. 7, vp, Publ.Yr: 1986
Languages: ENGLISH

Public and governmental interest in industrial wastes has traditionally resulted in the expenditure of much time and money on the "embedded" problem of treating abandoned hazardous waste dumps, preventing the illegal dumping of wastes, and regulating industrial discharges and dumping. The vital importance of strategies to reduce the generation of industrial wastes at the source, or the "process" problem, is often neglected. Accepted strategies for reducing both the toxicity and volume of industrial waste vary from minimal-cost efforts to major changes in production processes. No single strategy is always best and usually the optimal solution is a composite approach.
[POL]

0186646 *87-003601
REDUCING THE HAZARDS: TECHNOLOGY AND MANAGEMENT PRACTICES,
SHERRY SUSAN
GOLDEN EMPIRE HEALTH PLANNING CENTER REPORT, OCT 85, P169(67)

ASSN REPORT SOME STATE OF THE ART TECHNOLOGIES ARE SPECIFIED FOR USE BY HIGH TECHNOLOGY INDUSTRIES TO REDUCE HAZARDS AND PREVENT TOXIC CONTAMINATION. THESE INCLUDE WASTE SOURCE REDUCTION, RESOURCE RECOVERY AND RECYCLING, WASTE TREATMENT, SAFE DISPOSAL, AND STORAGE. IT IS INDUSTRY'S RESPONSIBILITY TO FIRST REDUCE AND RECYCLE, THEN DETOXIFY HAZARDOUS WASTES SO THAT DISCHARGES AND DISPOSAL PRACTICES DO NOT THREATEN ENVIRONMENTAL RESOURCES AND COMMUNITY HEALTH. THIS HAZARDOUS WASTE MANAGEMENT HIERARCHY REPRESENTS A KEY PREVENTIVE APPROACH TO REDUCING THE COMMUNITY HAZARD ASSOCIATED WITH INDUSTRIAL CHEMICALS.
[ENV]

0187352 *87-008269
INDUSTRIAL DEVELOPMENT (THE ENVIRONMENT, PUBLIC HEALTH, AND HUMAN ECOLOGY),
LEE JAMES A.
WORLD BANK/JOHNS HOPKINS UNIV PRESS REPORT, 1985, P106(19)

ASSN REPORT EVERY INDUSTRIAL DEVELOPMENT PROJECT IS A POTENTIAL SOURCE OF POLLUTION, BUT CAREFUL ADVANCE PLANNING CAN MINIMIZE THE LEVEL OF POLLUTION AND ITS EFFECT ON THE POPULATION AND SURROUNDING ENVIRONMENT. THE MOST COMMON PROBLEMS ASSOCIATED WITH INDUSTRIAL FACILITIES ARE AIR AND WATER POLLUTION, THE CREATION OF SOLID WASTES, NOISE, MODIFICATION OF TRADITIONAL LAND USE, AND PROBLEMS ASSOCIATED WITH THE SETTLEMENT OF WORKERS AND THEIR FAMILIES. A FRAMEWORK IS PROVIDED FOR ANALYZING THE ENVIRONMENTAL IMPACTS OF PROPOSED INDUSTRIAL DEVELOPMENT PROJECTS. IN EVALUATING A PROJECT, PARTICULAR ATTENTION SHOULD BE GIVEN TO THE INTERRELATIONSHIP BETWEEN CHOICES OF PROCESS AND THE POTENTIAL FOR RECYCLING, BETWEEN PLANT LOCATION AND DIRECT IMPACTS, AND BETWEEN WASTE MANAGEMENT AND PROCESS DESIGN.
[ENV]

0180720 *86-033146
LESS IS BETTER: LABORATORY CHEMICAL MANAGEMENT FOR WASTE REDUCTION
ACS REPORT, 1985 (16) ASSN REPORT

A LABORATORY CHEMICAL MANAGEMENT SYSTEM CAN REDUCE THE AMOUNT OF CHEMICALS THAT MAY BECOME WASTED, THEREBY PROVING AN ALTERNATIVE TO LANDFILLING FOR CHEMICAL WASTE DISPOSAL. VARIOUS TECHNIQUES CAN BE EMPLOYED TO DEVELOP A ''LESS IS BETTER'' PHILOSOPHY OF HAZARDOUS WASTE MANAGEMENT. EXTENDED STORAGE OF UNUSED CHEMICALS INCREASES ACCIDENT RISKS; SMALLER QUANTITY PURCHASES RESULT IN LESS UNUSED CHEMICALS BEING STORED AND REDUCE THE POTENTIAL FOR CHEMICAL EXPOSURE TO PERSONNEL. CODING SEQUENCES AND COMPUTER-BASED INVENTORY SYSTEMS HELP TRACK CHEMICALS FROM PURCHASE TO DISPOSAL AND REDUCE THE POSSIBILITY OF DUPLICATE PURCHASES. GUIDELINES FOR RECYCLING AND WASTE REDUCTION IN THE LABORATORY ARE SUMMARIZED. (1 DIAGRAM, 2 PHOTOS, 1 TABLE,)
[ENV]

85-02333
Process modification for industrial pollution source reduction
Tavlarides, L.L.
Pritzker Dep. Environ. Eng., Illinois Inst. Technol., Chicago, IL, USA
IND. WASTE MANAGE. SER Publ.Yr: 1985
LEWIS PUBLISHERS, 121 S. MAIN ST., P.O. DRAWER 519, CHELSEA, MI (USA)
Price: $24.95
Languages: ENGLISH

This volume describes one of the most innovative and potentially advantageous modern concepts for industrial waste management. It was prepared particularly for chemical and other engineers who work in industry and seek direction in process modification approaches for pollution abatement. The volume will also be extremely useful to environmental engineers, who increasingly must deal with pollution generation at the manufacturing point source. This volume will also assist the students in understanding the linkage between manufacturing technology and industrial pollution, and demonstrate how process modifications can effectively reduce or eliminate pollutants.
[POL]

1181172 PB86-150174/XAB
Reducing Hazardous Waste Generation: An Evaluation and a Call for Action (Final rept)
National Research Council, Washington, DC.
Corp. Source Codes: 019026000
Sponsor: Andrew W. Mellon Foundation, New York.
Report No.: ISBN-0-309-03498-1
1985 86p
Library of Congress catalog card no. 84-62248. Sponsored by Andrew W. Mellon Foundation, New York.
Languages: English
NTIS Prices: PC A05/MF A01 Journal Announcement: GRAI8610
Country of Publication: United States

The report examines key institutional, or nontechnical, factors that affect the generation of industrial waste and discusses the public policy approaches that could encourage industries to reduce generation. Industrial waste reduction programs can be expected to occur through a series of overlapping phases as the programs become increasingly costly and sophisticated. Public policies need to be dynamic and flexible to adapt to the changing circumstances. At this time, most waste reduction efforts in U.S. industry are in their early stages and many relatively simple and inexpensive opportunities exist for reducing generation of hazardous waste. Non-regulatory approaches, such as educational programs and information dissemination, are required to encourage waste reduction. Increasing costs of land disposal are also an important impetus to undertaking waste reduction programs. In the future, as industries need to use more sophisticated waste reduction methods, research and development assistance in meeting capital costs will be needed. Finally, the technological, political, and economic limit of waste reduction will be approached; a program of risk assessment and management will be needed to define this limit.
[NTIS]

255
Source reduction in the printed circuit industry
Couture, P.E.; Stephen, D.
Proceedings of the Third Annual Hazardous Materials Management Conference (HazMat '85)

This article reviews reduction techniques for rinse waste flow and volume as well as chemical conservation and substitution, metal recovery versus sludge generation, and dry versus wet manufacturing.
[MN]

67
Evaluation of industrial process modifications to reduce hazardous wastes in the Armed Services
Higgins, T.E.; Fergus, R.B.; Desher, D.P.
40th Annual Purdue Industrial Waste Conference, May 1985

Process modification case studies from DOD's metal finishing industry are discussed.
[MN]

13
Water conservation for electroplaters: rinse tank design
Hunt, G.
North Carolina Pollution Prevention Pays Program, 1985

This pollution prevention tip provides detailed information on how electroplaters can significantly reduce wastewater generation by reusing water in their production process and includes a discussion of rinse tank design, capital and operating costs and payback.
[NC]

15
Water conservation for electroplaters: counter-current rinsing
Hunt, G.
North Carolina Pollution Prevention Pays Program, 1985

This pollution prevention tip describes the technique of using counter-current rinsing to reduce wastewater generation and includes discussion on system design, capital and operating costs, and payback.
[NC]

16
Drag-out management for electroplaters
Hunt, G.
North Carolina Pollution Prevention Pays Program, 1985

This pollution prevention tip describes ways to reduce drag-out from electroplating process tanks and includes discussion on drag-out management techniques, drag-out reduction techniques, management of drag-out solutions, capital and operating costs, and payback.
[NC]

0181092 *86-033157

REDUCING HAZARDOUS WASTE GENERATION,

US NATL RESEARCH COUNCIL REPORT, 1985 (88)

FED GOVT REPORT WASTE REDUCTION SHOULD BE AN INTEGRAL COMPONENT OF ANY NATIONAL HAZARDOUS WASTE MANAGEMENT STRATEGY. KEY INSTITUTIONAL FACTORS THAT AFFECT THE GENERATION OF SUCH WASTE BY INDUSTRY ARE EXAMINED. WASTE REDUCTION CAN BE ACHIEVED BY IN-PLANT PROCESS MODIFICATIONS THAT CONTROL THE VOLUME OF WASTE GENERATED, AND BY RECYCLING PRACTICES. PUBLIC POLICIES SHOULD EMPHASIZE THE DISSEMINATION AND USE OF AVAILABLE WASTE REDUCTION TECHNOLOGIES THROUGH EDUCATIONAL PROGRAMS FOR GENERATORS, PUBLIC DEMONSTRATION OF EXISTING METHODS, AND ASSISTANCE TO WASTE EXCHANGES. IT IS ESSENTIAL TO PROPERLY PRICE TREATMENT AND DISPOSAL DURING ALL PHASES OF THE WASTE REDUCTION EFFORT. (4 DIAGRAMS, 24 REFERENCES, 5 TABLES,)

[ENV]

213

Benefits of microprocessor control of curing ovens for solvent-based coatings

U.S. EPA Industrial Environmental Research Laboratory, Cincinnati, OH

Report No.: EPA 625/2-84-031, September 1985

Two methods of controlling the tons of organic solvents (also known as VOCs) emitted into the air from curing ovens in the U.S. coating facilities are discussed: low solvent coatings and pollution control equipment.

[MN]

216

Review of source reduction policy and program development — a background report

Allen, D.W.; O'Connor, J.T.

Massachusetts Source Reduction Project, June 1985

Several aspects of source reduction in the U.S. are reviewed generally; a thematic review of recent source reduction policy directions and program developments are covered.

[MN]

235

Transfer of efficiency of improperly maintained or operated spray painting equipment sensitivity studies

Kennedy, K.C.
Centec Corp.
EPA Air and Engineering Research Laboratory, Research Triangle Park, NC
Report No.: EPA 600/2-85-107, September 1985

Report describes sensitivity studies on four types of spray systems to determine the effects of improper operating or maintenance on transfer efficiency.
[MN]

242

Waste reduction vs. waste minimization

Cartier, L.A.
PC FAB., pp. 76-77, December 1985

The author argues that manufacturers can benefit by implementing new reduction methods at their endpoint pollution control system.
[MN]

217

Source reduction by hazardous waste generating firms in New York State

Deyle, R.E.
Syracuse University Technology and Information Policy Program, July 1984

Based on initial hypotheses derived from environmental regulations and EPA studies, the author undertook a mini survey of 14 upstate New York hazardous waste generators and 5 consultants and presented hypotheses.
[MN]

65

Managing and minimizing hazardous waste metal sludges

Kohl, J.; Triplett, B.
NC State University
North Carolina Prevention Program 92pp December 1984

A manual to provide technical and supplier information to platers who could change so that they can examine available alternatives and change their operation to one that will result in less sludge.
[NC]

7

Managing and recycling solvents

Kohl, J.; Moses, P.; Triplett, B.
NC State University
North Carolina Pollution Prevention Program 100pp December 1984

Information is included on methods which can be used to properly manage and minimize the generation of waste solvents. Case studies of the techniques used by a wide variety of industries are presented along with economic information on costs and payback periods.
[NC]

54

Treatment of wastewater from cyanide zinc electroplating

Tanihara, K.; Yasuda, S.; Tamai, K.
METAL FINISHING, pp. 53-55, January 1983

Results are presented of the preliminary investigation on the process for removing cyanide from zinc electroplating wastewater, taking into account volume reduction of resulting sludge compared with conventional processes.
[MN]

0175369 *85-001522

IN-PLANT TREATMENT, REGENERATION, RECYCLING OF HAZARDOUS WASTE,

LEDONNE EUGENE
TAUNTON SILVERSMITHS, MA,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF, MA, OCT 13, 83, P133(6)

CONF PAPER SYSTEMS EMPLOYED AT A SILVER PLATING FACILITY TO CONTROL THE PRODUCTION OF HAZARDOUS WASTES ARE DESCRIBED. EFFLUENT RECIRCULATION TECHNIQUES REDUCE WASTE TREATMENT COSTS. METALS ARE RECOVERED FROM WASTEWATERS, PROVIDING A REUSABLE MATERIAL AND FURTHER DECREASING WASTE VOLUME GENERATION. EQUIPMENT REQUIREMENTS AND COSTS INCURRED ARE SUMMARIZED.
[ENV]

227
Environmental and energy benefits of microprocessor control of oven air flows from metal painting operations
U.S. EPA Industrial Environmental Research Laboratory, Cincinnati, OH
Report No: EPA 600/S7-83-037, October 1983

This process demonstrated the capability of microprocessors to control and allow ovens to operate close to 50 percent lower explosive limit (LEL) without exceeding the limit.
[MN]

0175358 *85-001511
PLANT ORGANIZATION AND MANAGEMENT ISSUES FOR A SOURCE REDUCTION PROGRAM,
NOWICK HENRY W.
MONSANTO POLYMER PRODUCTS CO,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF,
MA, OCT 13, 83, P279(13)

CONF PAPER THE WIDELY ACCEPTED HIERARCHY OF HAZARDOUS WASTE MANAGEMENT OPTIONS PLACES REDUCTION, RECOVERY, TREATMENT, AND DISPOSAL IN A DESCENDING ORDER OF PREFERENCE. THE ECONOMICS OF THESE ALTERNATIVES VARY BETWEEN GENERATORS AND ARE OFTEN DICTATED BY GENERATOR TYPE, SIZE, AND LOCATION. A PERIODIC REVIEW OF MANAGEMENT OPTIONS IS ADVOCATED TO ASSURE THAT COST-EFFECTIVE BUSINESS DECISIONS ARE MADE. SUCH REVIEW OF WASTE MANAGEMENT CHOICES AND PLANS CAN BE ACCOMPLISHED BY ORGANIZATION OF MULTIDISCIPLINARY TEAMS. (2 DIAGRAMS, 2 GRAPHS, 15 REFERENCES,)
[ENV]

44
Control and treatment technology for the metal finishing industry: in-plant changes
Centec Corp.
Report No.: EPA 625/5-82-018, January 1982

Rising prices and changing regulations have forced reevaluation of water pollution control techniques and costs and improved material yield. In-plant changes reduce chemical, water, wastewater, and disposal costs.
[MN]

15
New evaporation process: key to zero discharge for electroplaters
Anon.
CIVIL ENGINEERING-ASCE, pp. 58-59, August 1982

The cost-effective vapor-recompression evaporation technology is being used by the Navy in Pensacola, Florida, to achieve zero-discharge of pollutants.
[MN]

83-03541
Detoxication of hazardous waste
Exner, J.H. (ed.)
Address not stated
Publ.Yr: 1982
ANN ARBOR SCI., 10 TOWER OFFICE PARK, WOBURN, MA 01801, USA
$37.50.
Languages: ENGLISH

Detoxication of wastes intended for landfill or incineration offers many advantages — reduces legal liability, improves the efficiency and safety of incineration, allows recovery of valuable chemicals. This is the definitive work on detoxication procedures now available for solving pollution problems. No comparable study offers the full coverage provided by this volume. An introductory section gives political, societal, legal, and technical aspects of detoxifying hazardous wastes. The book then focuses on chemical, physical, and biological techniques that modify or destroy hazardous waste. A variety of detoxication procedures are explained that can be used to treat hazardous waste as a practical alternative to landfill disposal.
[POL]

82-03853
Recycling Hazardous Waste
Durso-Hughes, K.; Lewis, J.
Environ. Action Found. Waste & Toxic Subst. Proj.
ENVIRONMENT VOL. 24, NO. 2, p. 14, Publ.Yr: 1982
Languages: ENGLISH

Production is up and manufacturing costs down at an electroplating plant in Cincinnati. A factory in Culvert, Kentucky, has reduced the amount of expensive crude oil it needs to produce vinyl chloride, and a major Minnesota-based company has already saved millions of dollars after a new system for recovering chromium was installed at its plant. These are not the first fruits of the Reagan Administration's regulatory relief program. On the contrary, success stories such as these are related to the stronger laws of the last decade which govern industrial waste emissions and which have spurred increased interest in the alternative hazardous waste management strategies of reduction (changing the industrial process so that hazardous by-products are not produced), recycling (reusing waste materials), and resource recovery (extracting valuable materials from the waste stream).
[POL]

13
Low or non-pollution technology
3M Company
Prepared for the United Nations Environment Prog., Office of Industry and Environment, June 1982

Low or non-pollution technology covers not only production, but also product use, energy, raw materials, and waste disposal as well as matters relating to protection of the environment.
[MN]

0155358 *82-001229
WHAT TO DO WITH HAZARDOUS WASTES,
SENKAN, SELIM M. ; STAUFFER NANCY W.
MIT,
TECHNOLOGY REVIEW, NOV-DEC 81, V84, N2, P34 (14)

FEATURE ARTICLE THE DISPOSAL OF HAZARDOUS CHEMICAL WASTES IS AN OLD PROBLEM FACED BY INDUSTRIALIZED CIVILIZATION. THE MENACE IS EVIDENT: TOXIC WASTES THREATEN OUR HEALTH AND THE ENVIRONMENT. IN THE 1970'S A NEW PUBLIC AWARENESS OF WASTE DISPOSAL PROBLEMS LED TO OUTRAGE AND TERROR AT DUMPING METHODS. SEVERAL OPTIONS FOR WASTE MANAGEMENT ARE PRESENTED: (1) RECYCLING WITHIN THE INDUSTRY THAT PRODUCES THE WASTE; (2) SELLING TO OTHER INDUSTRIES; (3) TREATING AND RECYCLING WITHIN THE SAME INDUSTRY, SELLING TO ANOTHER INDUSTRY; (4) DISPOSING WITHOUT PRETREATMENT (AN ILLEGAL PRACTICE WHEN HAZARDOUS WASTES ARE CONCERNED). PREFERABLE METHODS FOR DEALING WITH THE PROBLEM INCLUDE SOURCE REDUCTION TO REDUCE THE INITIAL QUANTITY OF WASTES PRODUCED, AND WASTE RECYCLING FOR REUSE. (3 DIAGRAMS, 2 DRAWINGS, 3 TABLES)
[ENV]

89
Chemelec cleans up electroplating losses
Anon.
ENERGY DIGEST, pp. 38-40, February 1981

The "Chemelec cell" can be applied to drag-out rinse tanks with excellent results. Rinsewater is required less frequently and valuable metal content is reclaimed at high efficiency and low cost.
[MN]

131
Establishing a program for pollution control, part 1: modification, maintenance, and conservation
Roy, C.H.
PLATING AND SURFACE FINISHING, pp. 40-41, October 1981

In-plant modifications, water conservation, and conventional waste treatment that complement recovery systems are the foundation of a successful anti-pollution campaign.
[MN]

192
Waste generation reduction: a first step toward developing a regulatory policy to encourage hazardous substance management through production process change
Caldart, C.C.; Ryan, C.W.
HAZARDOUS WASTE AND HAZARDOUS MATERIALS, VOL. 2. NO. 3, pp. 309-331, 1981

A regulatory climate must be created to motivate industry to explore necessary technical innovation and adaptation in order to change their industrial processes to result in reduced hazardous wastes generated.
[MN]

81-05761
Government/Industry Cooperation Crucial to Hazardous Waste Solutions
Shapiro, I.S.
EI du Pont de Nemours & CO
PROFESS. ENG VOL. 50, NO. 4, pp. 20-23, Publ.Yr: 1980
Languages: ENGLISH

In some measure, hazardous wastes are the inevitable by-products of the goods that we demand. Toxic waste products are generated by production of the clothes we wear, the food we eat, the cars we drive, and the medicines we take. Everyone would agree that steel is an essential product. Yet making steel produces hydrochloric acid, sulfuric acid, and potentially toxic zinc salts. These wastes are increasingly being minimized by changes in production technology and by recovery and recycling, but they cannot be totally eliminated.
[POL]

79-07018
Safe disposal practices for hazardous wastes.
Frisbie, L. H.
Mobay Chemical Corp., Box 4913, Kansas City, MO 64120
1978 national conference on control of hazardous material spills Miami Beach, Florida Apr. 11-13, 1978
Control of hazardous material spills: Proceedings pp. 213-216
Publ.Yr: (1978?)
Publ: Rockville, MD Information Transfer
Languages: ENGLISH
Doc Type: CONFERENCE PAPER

Prevention of hazardous wastes, the safest "disposal" method, may involve chemical process changes, additional processing equipment to separate and reuse or destroy hazardous components; improved operating procedures to reduce contamination; reuse of the material onsite or sale for reuse by another facility; reuse or sale of the material for fuel; strong control of the disposal program to reduce the potential for emissions of the hazardous material during handling, transportation, and disposal; and prompt action when emission does occur to reduce the spread of contamination and minimize the volume of hazardous waste created. In order of preference, disposal methods favored are sale or transfer for reuse or for fuel, incineration, landfilling, and, to a limited extent, deep well injection. (FT)
[POL]

MATERIALS RECOVERY

87-00821
Plasma technology
Herlitz, H.G.
SKF Stell Eng., Avon, CT, USA
ENVIRON. SCI. TECHNOL VOL. 20, NO. 11, pp. 1102-1103, Publ.Yr: 1986
Languages: ENGLISH

Use of high-temperature plasma shows promise for metal recovery and hazardous waste destruction.
[POL]

222
Alternative techniques for managing solvent wastes
Blaney, B.L.
JOURNAL OF THE AMERICAN POLLUTION CONTROL ASSOC., VOL. 36, NO. 3, pp. 275-284, March 1986

Alternatives such as recycle/reuse, destruction of a stream's solvent component, and treatment are reviewed. Seven waste treatment techniques are described, including incineration and carbon adsorption.
[MN]

232
Evaluation of electrochemical recovery of cadmium at a metal finishing plant
Vachon, D.T.; Bissett, W.; Calver, B.A.; Dickson, G.A.
PLATING AND SURFACE FINISHING, pp. 68-73, April 1986

A prototype electrochemical reactor was installed at a job shop to recover cadmium and destroy cyanide from plating rinsewater. Installing the new system was more economical than upgrading the existing facility.
[MN]

234
Solvent vapor recovery and VOC emission control
Cheremisinoff, P.N.
POLLUTION ENGINEERING, pp. 26-30, June 1986

A review of solvent recovery systems is presented. These systems pay off by recovering valuable solvents and process heat, and protecting the environment.
[MN]

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240
Ion exchange for metal recovery: a discussion of trade-offs
Karrs, S.; Buckley, D.M.; Steward, F.A.
PLATING AND SURFACE FINISHING, pp. 60-66, April 1986

Ion exchange for metal salt recovery has advantages and disadvantages. However, its flexibility makes it especially attractive for some purposes.
[MN]

247
Metal recovery from industrial wastes
Brooks, C.S.
JOURNAL OF METALS, pp. 50-57, July 1986

This article reviews factors affecting feasibility of recovering nonferrous metals from waste (e.g., regulatory and characteristics of certain metals as incentives for recycling) with emphasis on separations technologies.
[MN]

22
Recovery Options for Toxic Air Emissions
Spivey, J.J.
Research Triangle Institute
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina 50pp September,1986

Available vapor recovery technologies are summarized which can be used to manage toxic air emissions. Information is provided on the applicability and cost-effectiveness of the available technologies which which can be used by small and medium-sized firms.
[NC]

0183805 *86-050924
A RENAISSANCE IN RECYCLING,
BASTA NICHOLAS
HIGH TECHNOLOGY, OCT 85, V5, N10, P32(6)

JOURNAL ARTICLE RESOURCE RECOVERY IS NOW BEING CONSIDERED FOR NEARLY ALL MANUFACTURING PROCESSES, AND IN MANY OF THEM IT HAS ALREADY BECOME STANDARD PRACTICE. NEW PLASMA TECHNOLOGY, POLYMERIC MEMBRANES, AND ELECTROCHEMICAL REACTIONS CAN CULL VALUABLE METAL COMPOUNDS FROM SLAGS, WASTEWATERS, OR FACTORY DUSTS. OTHER PROCESSES EMPLOY NOVEL BIOTECHNOLOGICAL METHODS TO EXTRACT COSTLY METALS FROM WASTE STREAMS. SEVERAL TECHNIQUES ARE ALSO UNDER DEVELOPMENT TO ENHANCE THE RECYCLING OF PLASTICS. GAS PRODUCTION FROM LANDFILLS AND USE OF MUNICIPAL SOLID WASTE AS AN ENERGY SOURCE REPRESENT OTHER AVENUES OF RESOURCE RECOVERY AND RECYCLING.[ENV]

198
Waste minimization alternative recovery technologies
Steward, F.A.; McLay, W.J.
Lancy International, Inc., 1985

Increased federal regulations and disposal costs have made metal finishers more interested in metal recovery technology techniques. This publication reviews generally some established recovery techniques that are available.
[MN]

133
Solvent recovery system
Gould, J.
POLLUTION ENGINEERING, June 1985

A new two-absorber solvent recovery system designed by Vara, International for Manville (NJ) Corp, is described.
[MN]

14
Water conservation for electroplaters: rinse water reuse
Hunt, G.
North Carolina Pollution Prevention Pays Program, 1985

This pollution prevention tip provides detailed information on how electroplaters can significantly reduce wastewater generation by reusing water in electroplating production processes and includes discussion on techniques for rinse water reuse, capital and operating costs, and payback.
[NC]

127
Copper recovery from a brass bright dipping solution
Egide, J.C.; Robertson, W.M.
POLLUTION ENGINEERING, pp. 48-49, March 1984

A system for removal of copper metal and its subsequent recovery from a brass bright dipping solution has been developed and field-proven. The system has demonstrated a rapid payback period.
[MN]

56

Electrolytic recovery of precious and common metals

Hradil, E.F.; Hradil, G.
METAL FINISHING, pp. 85-88, November 1984

Electrolytic recovery is an effective means of removing most metals from diluted solutions. When used in conjuction with chemicals, cyanide destruction, and pH control, it provides the best means of compliance with EPA.
[MN]

105

Recovery processes for complexed copper-bearing rinse waters

Spearot, R.M.; Peck, J.V.
ENVIRONMENTAL PROGRESS, VOL. 3, NO. 2, pp. 124-128, May 1984

A state-of-the-art review of the advantages and disadvantages of currently available technologies.
[MN]

36

A new ion-exchange material for metal finishers

Zapisek, S.
PLATING AND SURFACE FINISHING, pp. 34-36, April 1984

Maximum recycling of materials is possible on a process-to-process basis using new ion-exchange technology. The approach is economical and has practical value.
[MN]

0181622 *86-037274

RECOVERY OF SOLVENTS,
MULLER KLAUS
DANISH ENV PROTECTION AGENCY,
CHEMCONTROL A/S 2ND OPERATING EUROPEAN HAZWASTE MGT INTL SYM, ODENSE, DENMARK, SEP 11-14, 84 (18)

CONF PAPER THE RECYCLING OF INDUSTRIAL SOLVENTS HAS IMPORTANT IMPLICATIONS FOR ENERGY CONSERVATION, ENVIRONMENTAL PROTECTION, AND HAZARDOUS WASTE REDUCTION. ON-SITE INDUSTRIAL RECOVERY OPERATIONS ARE IDENTIFIED AS MECHANICAL SEPARATION, EXTRACTION, EVAPORATION, DISTILLATION, DRYING, CONDENSATION, ABSORPTION, AND ADSORPTION. OFF-SITE SOLVENT RECOVERY CONSIDERATIONS ARE ALSO SURVEYED.
[ENV]

19
Some guidelines for recycling precious metals
Catchmark, M.
PLATING AND SURFACE FINISHING, pp. 46-47, April 1984

Activities such as segregating scrap, assaying, and refining are discussed.
[MN]

17
Removal and recovery of heavy and precious metals with sodium borohydride
Anon.
METAL R&R NEWSLETTER, ISSUE NO. 4, January 1984

In this study, sodium borohydride was found to be the most effective technology for hazardous sludge reduction.
[MN]

209
Hydrocarbon solvent recovery in the presence of resin contaminants
Turpin, J.L.
U.S. EPA Industrial Environmental Research Laboratory, Cincinnati, OH,
Report No.: EPA 600/S2-84-033, May 1984

A system to recover from an air stream in which there was suspended epoxy resin particles, representative of many industrial situations that require recovery of hydrocarbon solvents from a gaseous stream with resins.
[MN]

1027881 PB84-127141
Recovery, Reuse, and Recycle of Industrial Waste
Noll, K. E. ; Haas, C. N. ; Schmidt, C. ; Kodukula, P.
Illinois Inst. of Tech., Chicago.
Corp. Source Codes: 002114000
Sponsor: Industrial Environmental Research Lab.-Cincinnati, OH.
Report No.: EPA-600/2-83-114
Nov 83 217p
Languages: English
NTIS Prices: PC A10/MF A01 Journal Announcement: GRAI8404
Country of Publication: United States
Contract No.: EPA-R-806819

The major goal of this work is to produce a document useful in planning efforts aimed at elimination of industrial wastes through the application of recycle, recovery, and reuse technology. The pollutants considered in this study are basically organic and inorganic by-products from wastewater effluents, solid residue and gaseous emissions from industrial operations. The first section contains chapters on methodology currently available for recovery of industrial and hazardous waste, and developing technology for recycle, reuse and recovery. The second section contains chapters on 5 technical categories, used for recovery namely, sorption, molecular separation, phase transition, chemical modification, and physical dispersion and separation.
[NTIS]

49
Project summary: alternate treatment of organic solvents and sludges from metal finishing operations
Cheng, S.C.; Ctvrtnicek, T.E.; Desai, B.O.; Smith, C.S.; et al.
Report No.: EPA 600/S2-83-094, December 1983

Study objectives describe the metal finishing industry, quantity and compostion of organic wastes, current technologies to recover and dispose of materials, and conclusions and recommendations on future improvements.
[MN]

53
Recovery of metals from electroplating wastes using liquid-liquid extraction
Clevenger, T.E.; Novak, J.T.
JOURNAL OF WATER POLLUTION CONTROL FEDERATION, VOL. 55, NO. 7, pp. 984-989, July 1983

Study was designed to determine applicability of liquid-liquid extraction for separation and recovery of individual metals from a synthetic mix metal system using several chelating agents.
[MN]

12
The recovery of organic solvents from liquid scintillation wastes
Mangravite, J.A.; Gallis, D.; Foery, R.
American Laboratory, July 1983

A major problem with organic solvent waste management is in liquid scintillation wastes. This paper suggests feasible methodologies for a typical program for separating amd recovering these solvents from liquid wastes.
[MN]

0175463 *85-001836
PHENOL RECOVERY PROCESS,
RHODES JOHN M.
GENERAL ELECTRIC CO, MA,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF,
MA, OCT 13, 83, P186(7)

CONF PAPER A PROCEDURE IS OUTLINED FOR THE RECOVERY OF PHENOL FROM A PHENOLIC RESIN MANUFACTURING WASTE STREAM. CONCENTRATED PHENOL IS REMOVED FROM EFFLUENTS USING A MULTI-STAGE PROCESS INCLUDING PHASE SEPARATION, SOLVENT EXTRACTION, AND DISTILLATION. AN ESTIMATED 2 MILLION LB/YEAR CAN BE RECLAIMED IN THE U.S. DUE TO ITS HIGH QUALITY, THE RECOVERED PHENOL CAN BE REUSED DIRECTLY IN MANUFACTURING PROCESSES. (2 DIAGRAMS, 1 GRAPH, 7 REFERENCES,)
[ENV]

175
The recovery and treatment of metals from spent electroless processing solutions
Warheit, K.E.
Annual Tech, Conf. Proc. of Amer. Electroplat. Soc., Vol. 70, 1983

The best approach for recovery and treatment of electroless wastes is to electrolytically recover metals from combined dumped process solution and dragout rinse.
[MN]

41
A preliminary handbook on the potential of recycling or recovery of industrial hazardous wastes in New York State
Batelle Columbus Laboratories
Prepared for New York Environmental Facilities Corporation, July 1982

The potential for recycling/recovery of hazardous wastes is studied for 47 waste entries.
[MN]

33
Reverse osmosis in the metal finishing industry
Crampton, P.; Wilmoth, R.
METAL FINISHING, pp. 21-27, March 1982

The relatively simple and low-cost technology of reverse osmosis is examined. It is used to recover plating chemicals from rinsewater as well as to purify mixed wastewater to allow its reuse.
[MN]

111
A novel electrodialysis recovery unit
Tison, R.P.; Paluch, R.F.
PLATING AND SURFACE FINISHING, pp. 60-62, December 1982

Experimental performance, including recovery rates, control and operational stability, and electrical energy requirements are presented
[MN]

83
Electrolytic recovery of metals
Blake, A.R.
Recycling International, 1982

Developed novel high mass transfer electrochemical reactor is described, which enables metals to be recovered from dilute solution at high electrical efficiency and in a form which is suitable for direct recycling.
[MN]

91
Recycling rinse waster
Poll, Jr., G.H.
PRODUCTS FINISHING, pp.58-64, November 1982

The process used by a job painting shop for purifying its rinsewater and reusing it is illustrated.
[MN]

95
Recovery of aluminum finishing wastes
Brown, C.
INDUSTRIAL FINISHING, pp. 56-60, October 1982

Twelve on-stream processes for recovering aluminum finishing wastes are discussed.
[MN]

152
Renovation of electroplating rinse waters with couples-transport membranes
Babcock, W.C.; LaChapelle, E.D.; Baker, R.W.
Report No.: EPA 600/9-82-022
Fourth Conf. on Adv. Poll. Cont. Met. Fin. Ind., pp.86-90, December 1982

A new membrane process is described that can be used to recover plating chemicals from electroplating rinsewaters. The results of a small field test are presented.
[MN]

35
Principles of electrodialysis for nickel-plating rinsewater
Markovac, V.; Heller, H.C.
PLATING AND SURFACE FINISHING, pp. 66-69, December 1981

Electrodialysis, using ion-selective membranes, is a potentially effective method for recovering nickel ions from rinsewater and generating clean water for reuse in the plating plant.
[MN]

77
Conservation of chromium in the tanning industry
Tancous, J.J.; Bellingham, R.; Kallenberger, W.; Mcdonell, A.
JOURNAL OF AMERICAN LEATHER CHEMISTS ASSOCIATION,
VOL. 76, pp. 164-175, 1981

Chromium conservation is possible by recycling chromium liquors and by precipitating the chromium from spent tanning liquors before they are combined with other tannery wastes.
[MN]

185
Treatment of industrial wastewaters with formaldehyde
Tuznik, R.S.
Proc. of the 13th Mid-Atlantic Conf. on Industrial Waste,
pp. 416-426, 1981

Formaldehyde is a good agent for treating some industrial wastes and for recovery of metals from wastewaters. HCHO treats wastewaters containing cyanides as well as electroplating, heat treatment, and blast furnace wastes.
[MN]

173
Automatic control and continuous regeneration of an electroless plating bath
Horn, R.E.
Plating in the Electronics Industry: Eighth Symposium, pp.1-6, 1981

Chemistry of usual copper electroless plating baths is explained, compositions of several baths are given and the reactions that occur are shown. A method for recovery and regeneration of plating baths has been developed.
[MN]

139
Recovery of zinc from wastewater treatment sludge
Stephenson, J.B.; Cole. E.R.; Paulson, D.L.
RESOURCES AND CONSERVATION, VOL. 6, pp. 203-210, 1981

Preliminary laboratory work has indicated that zinc can be recovered from wastewater treatment sludges. The method developed for extracting involves roasting, leaching-purification, and electrowinning.
[MN]

148
Liquid ion exchange in metal recovery and recycling
Gallacher, L.V.
Report No.: EPA-600/2-81-028
Third Conf. Adv. Poll. Cont. Met. Fin. Ind., pp. 37-42, February 1981

Four applications of liquid ion exchange in metal recovery are presented. Major types of reagents and how they can be applied to solve specific problems and what the future holds are also discussed.
[MN]

32
Electroplating and cyanide wastes
Knocke, W.R.
JOURNAL WPCF, VOL. 53, NO. 6, pp. 847-851, June 1981

This article discusses EPA regulations, metals recovery, cyanide reduction and detection, and sludge treatment in the electroplating industry.
[MN]

149
Regeneration of waste chromic acid etching solutions in an industrial scale research unit
George, L.C.; Soboroff, D.M.; Cochran, A.A.
Report No.: EPA 600/2-81-028
Third Conf. Adv. Poll. Cont. Met. Fin. Ind., pp. 33-36, February 1981

Much chromium is lost in surface finishing operations and discarded spent solutions containing hexavalent chromium and sulfuric acid, causing pollution. Research shows that spent solutions can be regenerated in a diaphragm cell.
[MN]

86
Recuperation of pure metal salts from mixed metal hydroxide sludges
Tels, M; Lotens, J.P.
National Waste Processing Conference, pp. 109-119, 1980

A process aimed at recuperating from the mixed hydroxides of iron, copper, zinc, nickel, chromium, and the pure salts of the last four metals is discussed.
[MN]

52
Recovery and treatment of plating and anodizing wastes
Kostura, J.D.
PLATING AND SURFACE FINISHING, pp. 52-52, August 1980

Evaporative and wastewater treatment systems installed for an anodizing and plating plant are discussed. Performance of the system effectively meets "four-day averages" proposed by EPA for discharges to POTWs.
[MN]

20
Electrodialytic recovery process of metal finishing waste water
Itoi, S.; Nakamura, I.; Kawahara, T.
DESALINATION, VOL. 32, pp. 383-389, January 1980

A study for electrodialytic recovery of wastewater was made in the nickel electroplating process. Proper pretreatment and suitably designed operation condition of the unit are needed for long term stability.
[MN]

55
Industrial waste: an unexpected source of valuable minerals
Comptroller General Report to Congress
U.S. General Accounting Office, May 1980

This review is focused on steel, electroplating, copper, aluminum, lead, zinc, stainless steel, and secondary recovery industries. Companies in 13 states were visited to determine their recovery practices and potential for further and increased recovery.
[MN]

18
Chemical recovery: key to platers' woes
Obrzut, J.J.
IRON AGE, pp. 47-52, June 1980

To ease the problems of rising costs and federal regulations, electroplaters can recycle raw materials from wastewater using evaporation, reverse osmosis, ion exchange, and electrodialysis.
[MN]

39
Recovery of nitric acid from solutions used for treating metal surfaces
Brown, C.J.; Davy, D.; Simmons, P.J.
PLATING AND SURFACE FINISHING, pp. 60-62, February 1980

Nitric acid can be economically recovered from spent stripping solutions using a reciprocating-flow, ion-exchange system.
[MN]

125
Electrolytic metals recovery
Kamperman, D.R.
Annual Tech. Conf. Amer. Electroplat. Soc., Jun 22-26, 1980

New developments allow for high efficiency while generating slabs of pure metal through a unique cell design which minimizes cathode polarization. Some successful applications are discussed.
[MN]

126
Recovery systems for the light metals finisher
Brown, C.J.
Annual Technical Conference of American Electroplating Society,
June 22-26, 1980

Utilizing cation and anion exchange as well as acid retardation principles, a new technique called reciprocating flow ion exchange has been applied to a wide variety of recovery operations in this field.
[MN]

184
Seeding of electroless copper waste for copper removal and recovery as elemental copper
Ireland, I.R.
IPC Workshop on Water Pollution Control, Evanston, IL, May 1980

Manufacturing PTH printed wire boards presents uncommon and noncompatible waste treatment problems to most metal finishing industries and with common waste treatment methods.
[MN]

158
Recovery of fluoborate acid from waste copper fluoborate-fluoboric acid solutions by ion exchange
Ghossi, P.; Donatelli, A.A.
INDUSTRIAL ENGINEERING CHEMICAL PROCESSING DESIGN AND DEVELOPMENT, VOL. 19, NO. 4, pp. 526-530, 1980

Ion exchange used for recovery of fluoboric acid from copper fluoborate-fluoboric acid wastes. System is a laboratory size fixed-bed ion exchange column.
[MN]

183
Assessment of industrial hazardous waste practices: paint and allied products industry contract solvent reclaiming operations
Anon.
U.S. EPA, 1976

The assessment discusses efforts in three basic industries, paint and coatings manufacturing, solvent reclaiming, and factory-applied coatings operations, to estimate quantity and characteristics of potentially hazardous wastes and to determine treatment and disposal.
[MN]

ENERGY RECOVERY

0184178 *86-054627
ENERGY RECOVERY FROM INDUSTRIAL WASTE INCINERATION PROCESSES,
SANTOLERI J. J.
FOUR NINES INC, PA,
ASME INDUSTRIAL POLLUTION CONTROL SYM, DALLAS, FEB 17-21, 85, P49(8)

CONF PAPER COSTS OF LAND DISPOSAL FOR INDUSTRIAL WASTES HAVE INCREASED AND REGULATIONS HAVE BECOME MORE STRINGENT. INCINERATION CAN BE DEPLOYED TO REDUCE THE TOTAL VOLUME AND DETOXIFY WASTE WHILE RECOVERING HEAT ENERGY. HEAT RECOVERY CAN HELP OFFSET THE HIGH ENERGY COSTS INCURRED BY INCINERATOR OPERATION. DESIGN AND OPERATING CONSIDERATIONS CONCERNING THE INCINERATION OF ORGANIC HAZARDOUS WASTE STREAMS ARE DISCUSSED.
[ENV]

0172860 *84-004769
HAZARDOUS WASTE INCINERATION,
PEACY JON
JPC CONSULTANTS, IL,
POLLUTION ENGINEERING, APR 84, V16, N4, P35 (8)

JOURNAL ARTICLE INCINERATION IS CURRENTLY REGARDED AS THE ONLY VIABLE MEANS IN SOME INSTANCES OF DESTROYING HAZARDOUS WASTES. IT OFFERS THE POTENTIAL SIDE BENEFIT OF CAPTURING AND REUSING HEAT TO CREATE STEAM FOR DIRECT USE OR COGENERATION. INCINERATION SYSTEM DESIGNS APPLICABLE TO HAZARDOUS WASTES ARE ADDRESSED. MODULAR-TYPE, ROTARY KILN, FLUIDIZED BED, GRATE SYSTEM, AND MULTIPLE HEARTH INCINERATOR OPERATING PRINCIPLES ARE SUMMARIZED. WET SCRUBBERS, ELECTROSTATIC PRECIPITATORS, AND OTHER DEVICES EFFECTIVELY REDUCE EMISSIONS. ENERGY RECOVERY IS EFFECTED THROUGH USE OF TURBINE GENERATORS OR WASTE HEAT BOILERS. A COMPENDIUM OF WASTE INCINERATOR EQUIPMENT MANUFACTURERS, DETAILING SYSTEM SPECIFICATIONS, IS INCLUDED. (14 REFERENCES, 3 TABLES)
[ENV]

0175348 *85-001496

HEAT RECOVERY FROM WASTE SOLVENTS: AN OPTION FOR SOURCE REDUCTION,

HERER DAVID O. ; CHAPLICK JAMES P.; COLLINS NEIL
CHARLES T. MAIN INC, BOSTON,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF,
MA, OCT 13, 83, P206(14)

CONF PAPER HEAT RECOVERY FROM WASTE SOLVENT COMBUSTION IS WIDELY PRACTICED IN THE U.S. THIS IS AN INCREASINGLY POPULAR HAZARDOUS WASTE MANAGEMENT OPTION FOR MASSACHUSETTS INDUSTRIES, DUE TO HIGH REGIONAL ENERGY COSTS AND INCREASING EXPENDITURES FOR OUT-OF-STATE DISPOSAL. AN INDUSTRY CAN BURN SOLVENTS IN AN EXISTING BOILER OR PURCHASE A NEW UNIT; AN INCINERATOR/WASTE HEAT BOILER COMBINATION CAN ALSO BE INSTALLED. ECONOMIC AND TECHNICAL CONSIDERATIONS INVOLVED IN SUCH WASTE DISPOSAL/ENERGY RECOVERY SCHEMES ARE EXAMINED. (2 DIAGRAMS, 6 REFERENCES, 4 TABLES,)
[ENV]

0167855 *83-006515

CO-INCINERATION/ENERGY RECOVERY OF LIQUID AND SOLID WASTES ,

ERLANDSSON KJELL I.
KELLEY CO, MILWAUKEE,
POLLUTION ENGINEERING, APR 83, V15, N4, P36 (4)

HAZARDOUS SOLID AND LIQUID WASTES CAN BE COMBINED AND BURNED IN A PYROLYTIC INCINERATOR WITHOUT CREATING AIR POLLUTION. EQUALLY IMPORTANT, THE HEAT RELEASED BY THE BURNING CAN BE RECOVERED AND USED BENEFICIALLY IN MANUFACTURING PROCESSES. THE ENERGY RECOVERED FROM ONE TON OF INDUSTRIAL SOLID REFUSE IS EQUIVALENT TO ABOUT 100 GAL OF FUEL OIL. SUCH COINCINERATION CAN ALSO RELIEVE THE REGULATORY BURDEN IMPOSED BY THE RESOURCE CONSERVATION & RECOVERY ACT OF 1976 CONCERNING HAZARDOUS WASTE DISPOSAL. INCINERATION SYSTEMS AND APPLICATIONS FOR THIS TECHNOLOGY ARE DISCUSSED. ECONOMIC ASPECTS OF SOLID WASTE INCINERATION AND ENERGY RECOVERY ARE ALSO CONSIDERED. (1 DIAGRAM, 3 GRAPHS, 2 TABLES)
[ENV]

124

Chlorinated hydrocarbon wastes

Miller, S.
ENVIRONMENTAL SCIENCE & TECHNOLOGY, VOL. 17, NO. 7, pp. 290A-291A, 1983

A process has been developed which destroys chlorinated hydrocarbons by incineration while simultaneously producing high-quality hydrochloric acid. It recovers 70-75 percent of heating value as high quality steam.
[MN]

10

Burning chemical wastes as fuel

Lauber, J.D.
JOURNAL OF AIR POLLUTION CONTROL ASSOCIATION, VOL. 32, NO.7,
pp. 771-776, July 1982

Lack of adequate hazardous waste disposal facilities is a critical problem. The best organic chemical waste disposal method is process incineration.
[MN]

WASTE EXCHANGES

0187988 *87-012344
IMPROVED HAZARDOUS WASTES MANAGEMENT NEEDS,
CHEMICAL ENGINEERING PROGRESS, SEP 86, V82, N9, P29(6)

JOURNAL ARTICLE MORE REALISTIC ESTIMATES OF THE TOTAL VOLUME OF SOLID WASTES GENERATED THAT CONTAIN HAZARDOUS CONSTITUENTS HAVE CREATED RENEWED INCENTIVES FOR IMPROVED TECHNOLOGY TO MANAGE THOSE WASTES. OF ALL HAZARDOUS WASTES, 96% IS MANAGED ON-SITE, AND 4% OFF-SITE. WITH RESPECT TO DISPOSITION, 67% IS TREATED, 51% STORED, 20% DISPOSED, AND 4% RECYCLED. ALTERNATIVES TO LANDFILL AND IMPOUNDMENT DISPOSAL ARE BEING SOUGHT, AND RESEARCH IS FOCUSING ON WASTE REDUCTION, SEPARATION AND CONCENTRATION OF HAZARDOUS CONSTITUENTS, WASTE EXCHANGES, NEW TREATMENT TECHNOLOGY, AND ENERGY/MATERIALS RECOVERY.
[ENV]

0184812 *86-060706
TECHNOLOGICAL NEEDS FOR IMPROVED MANAGEMENT OF HAZARDOUS WASTES,
AICHE REPORT, FEB 86 (12)

ASSN REPORT MANY CURRENT MEANS OF LAND DISPOSAL OF HAZARDOUS WASTE ARE NOT PROVIDING THE DESIRED LEVEL OF ENVIRONMENTAL PROTECTION. IMPROVED DISPOSAL PRACTICES MAY ARISE FROM ALTERED DESIGNS FOR EXISTING TREATMENT OR DISPOSAL OPTIONS OR USE OF ALTERNATE DISPOSAL TECHNOLOGIES. RESEARCH SHOULD ADDRESS REDUCTION OF WASTE VOLUMES REQUIRING ULTIMATE DISPOSAL. TECHNOLOGY PLANNING FOR WASTE SEPARATION AND CONCENTRATION, MATERIAL WASTE EXCHANGE, ENERGY/MATERIAL RECOVERY, AND WASTE TREATMENT/INCINERATION IS DISCUSSED. NEW LANDFILL DESIGNS, COEAN DISPOSAL CONCEPTS, AND SUBSURFACE DISPOSAL SYSTEMS CAN ALSO BE ADVANCED.
[ENV]

86-08462
North American waste exchanges: A marketing alternative for hazardous waste
Banning, W.; Herndon, R.C.; Jones, E.
Southern Waste Inf. Exch., P.O. Box 6487, Tallahassee, FL 32313, USA
HAZARDOUS WASTE HAZARDOUS MATER VOL. 3, NO. 3, PP. 321-332,
Publ.Yr: 1986
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Practical solutions to waste management problems by industry typically require a multifaceted approach for most waste streams, particullarly those containing hazardous wastes. Waste transfer or exchange between firms, as an alternative to other management methods such as land disposal or incineration, is becoming economically more attractive for many firms. In addition, the recent trend in regulations is toward encouraging recycling and waste reuse. The costs of properly managing hazardous wastes via treatment or disposal are relatively expensive. The exchange and reuse of waste materials may result in on-going revenues that can be used to defray operating costs. Waste exchanges, through their broad networks of contacts, help to identify resource reuse opportunities. The historical development of the network of non-profit and for-profit waste exchanges that has developed throughout North America is outlined and current characteristics are identified. Recent cooperation among exchanges has resulted in the development of the National Waste Exchange Data Base. This on-line computer information service provides manufacturers and recyclers with a new marketing tool to meet short-term (spot market) and long-term recycling needs. The role of exchanges in helping companies comply with recent federal waste certification and minimization requirement is explained.
[POL]

0184091 *86-054195
EPA/FLORIDA STATE UNIVERSITY 2ND NATIONAL WASTE EXCHANGE CONFERENCE, TALLAHASSEE, MARCH 5-6, 1985,
EPA REPORT, MAR 85 (136)

CONF PROCEEDINGS WASTE EXCHANGE ADMINISTRATORS, RECYCLERS, ENVIRONMENTAL ENGINEERS, AND CONSULTANTS MET IN TALLAHASSEE, FL, FOR THE 2ND NAT'L CONF. ON WASTE EXCHANGE ON MARCH 5-6, 1985. OBJECTIVES WERE TO PROMOTE AND ENHANCE COMMUNICATION AND COOPERATION AMONG THOSE CONCERNED WITH WASTE EXCHANGE AND RESOURCE REUSE AND TO ENCOURAGE PUBLIC AGENCIES AND INDUSTRY TO PARTICIPATE IN WASTE EXCHANGES. THE OPERATION OF SEVERAL REGIONAL WASTE EXCHANGES IN THE U.S. IS DESCRIBED, AS ARE REGULATORY AND ECONOMIC INCENTIVES FOR RECYCLING. SMALL QUANTITY HAZARDOUS WASTE MANAGEMENT IS DISCUSSED, AS IS WASTE EXCHANGE PROGRAMS AND HIGH TECH INDUSTRIES.
[ENV]

0182619 *86-042915
ECONOMIC EXCHANGE OF CHEMICAL AND INDUSTRIAL WASTE,
SLOAN WILLIAM M.
MARYLAND HAZARDOUS WASTE FACILITIES SITING BOARD,
CONSERVATION & RECYCLING, 1985, V8, N3-4, P335(7)

JOURNAL ARTICLE MOST CHEMICAL AND INDUSTRIAL WASTE CONTAINS LOW-VALUE BYPRODUCTS THAT FREQUENTLY INCUR SUBSTANTIAL DISPOSAL COSTS. ACTIVE OR PASSIVE WASTE EXCHANGES SEEK TO PROMOTE THE RECYCLING OF THESE MATERIALS. EXCHANGES ARE TYPICALLY NOT GOVERNMENT-RUN BUT RECEIVE MODEST SUBSIDIES. MEASURES TO MAKE EXCHANGES, RECOVERY, AND REDUCTION MORE EFFECTIVE WOULD BE A HIGHER QUALITY OF INFORMATION, GREATER ATTENTION BY MANAGEMENT, AND VIGOROUS PROMOTION OF THE EXCHANGES.
[ENV]

0181092 *86-033157
REDUCING HAZARDOUS WASTE GENERATION,
US NATL RESEARCH COUNCIL REPORT, 1985 (88)

FED GOVT REPORT WASTE REDUCTION SHOULD BE AN INTEGRAL COMPONENT OF ANY NATIONAL HAZARDOUS WASTE MANAGEMENT STRATEGY. KEY INSTITUTIONAL FACTORS THAT AFFECT THE GENERATION OF SUCH WASTE BY INDUSTRY ARE EXAMINED. WASTE REDUCTION CAN BE ACHIEVED BY IN-PLANT PROCESS MODIFICATIONS THAT CONTROL THE VOLUME OF WASTE GENERATED, AND BY RECYCLING PRACTICES. PUBLIC POLICIES SHOULD EMPHASIZE THE DISSEMINATION AND USE OF AVAILABLE WASTE REDUCTION TECHNOLOGIES THROUGH EDUCATIONAL PROGRAMS FOR GENERATORS, PUBLIC DEMONSTRATION OF EXISTING METHODS, AND ASSISTANCE TO WASTE EXCHANGES. IT IS ESSENTIAL TO PROPERLY PRICE TREATMENT AND DISPOSAL DURING ALL PHASES OF THE WASTE REDUCTION EFFORT. (4 DIAGRAMS, 24 REFERENCES, 5 TABLES,)
[ENV]

0174191 *84-006100
WASTE EXCHANGES: A LITTLE-KNOWN OPTION FOR A GROWING DILEMMA,
CHEMICAL BUSINESS, MAY 84, V6, N5, P25 (3)

JOURNAL ARTICLE SMALL- TO MEDIUM-SIZED COMPANIES IN THE U.S. ARE BEING CONFRONTED WITH WASTE, PARTICULARLY HAZARDOUS, MANAGEMENT PROBLEMS. WHERE LARGER FIRMS CAN SUPPORT INTERNAL RECYCLING PROGRAMS, SMALLER COMPANIES ARE LIMITED TO DISPOSAL THROUGH DUMPING OR INCINERATION. WASTE MANAGEMENT OPTIONS CAN BE BROADENED BY PARTICIPATING IN WASTE EXCHANGES. ABOUT 15 SUCH EXCHANGES ARE CURRENTLY OPERATING IN THE U.S. AND CANADA. ALL WORK UNDER THE SAME PRINCIPLE: THE EXCHANGE OF INFORMATION BETWEEN THE GENERATOR OF A WASTE PRODUCT AND COMPANY INTERESTED IN PURCHASING IT. HOWEVER, SOME POTENTIAL CUSTOMERS ARE RELUCTANT TO PARTICIPATE IN THE EXCHANGES, DUE TO VOLUMINOUS AMOUNTS OF PAPERWORK AND POTENTIAL CONFLICTS WITH PROVISIONS OF THE RESOURCE RECOVERY & CONSERVATION ACT OF 1976. (1 DIAGRAM)
[ENV]

0173524 *84-005433
WASTE EXCHANGES; AN UNDERUTILIZED WAY TO HELP THE BOTTOM LINE,
RICH LAURIE A.
CHEMICAL WEEK, MAY 16, 84, V134, N20, P56 (4)

JOURNAL ARTICLE THE PROS AND CONS OF WASTE EXCHANGES IN THE U.S. ARE DESCRIBED. SELLING WASTE STREAMS CAN SAVE DISPOSAL COSTS AND PROVIDE CHEAPER FEEDSTOCKS, THOUGH THERE ARE SEVERAL OBSTACLES TO COMPANY PARTICIPATION: FEAR OF ATTRACTING ATTENTION TO A COMPANY'S HAZARDOUS WASTES, AND AN INCREASE IN IN-HOUSE RECYCLING EFFORTS. WASTE EXCHANGES HAVE ACHIEVED ONLY A 10% TRANSFER RATE OF ALL MATERIALS LISTED, FAR BELOW THE 30-40% RATE ENJOYED BY OLDER EXCHANGES IN EUROPE. SEVENTEEN WASTE INFORMATION EXCHANGES AND FIVE WASTE MATERIALS EXCHANGES THROUGHOUT THE U.S. ARE TABULATED. (1 TABLE)
[ENV]

0175365 *85-001518
NEW YORK STATE INDUSTRIAL MATERIALS RECYCLING PROGRAM: THE SECOND YEAR,
SIMPSON PICKETT T.
NEW YORK STATE ENV FACILITIES CORP,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF, MA, OCT 13, 83, P227(22)

CONF PAPER THE NEW YORK STATE ENVIRONMENTAL FACILITIES CORP. IS REQUIRED BY STATE LAW TO PROMOTE ACTIVITIES FOR REDUCING THE AMOUNT OF WASTE NEEDING OFFSITE DISPOSAL. THE PUBLIC BENEFIT CORPORATION ENCOURAGES THE EXCHANGE OF INDUSTRIAL WASTE MATERIALS FOR RECYCLING, AND PROVIDES INDUSTRIES WITH RELATED TECHNICAL INFORMATION AND ASSISTANCE. PASSIVE AND ACTIVE WASTE EXCHANGE EFFORTS ARE DETAILED, AS ARE INDUSTRIAL FINANCING AND TECHNOLOGY TRANSFER SCHEMES. (3 DIAGRAMS, 5 TABLES,)
[ENV]

69
National directory of manufacturers utilizing recycled materials
Florida Department of Environmental Regulation
Prepared for Office of Recycled Materials, NBS, January 1983

Publication consolidates nationwide information on manufacturers that use recycled materials in the production process.
[MN]

0175361 *85-001514
THE ROLE OF A WASTE EXCHANGE IN INDUSTRIAL WASTE MANAGEMENT: IDENTIFYING OFF-SITE RECYCLING OPPORTUNITIES,
BANNING WALKER
NORTHEAST INDUSTRIAL WASTE EXCHANGE,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF,
MA,OCT 13, 83, P249(8)

CONF PAPER ECONOMIC, REGULATORY, AND LIABILITY CONCERNS ARE PROMPTING INDUSTRIAL MANAGERS TO SEEK WAYS OF MINIMIZING THE AMOUNT OF HAZARDOUS WASTE PRODUCED. THE NORTHEAST INDUSTRIAL WASTE EXCHANGE IS A CENTRALIZED INFORMATION CLEARINGHOUSE SERVING 11 STATES IN THE NORTHEASTERN U.S. BY HELPING MANUFACTURERS IDENTIFY OFF-SITE RECYCLING OPPORTUNITIES. NEARLY 1000 COMPANIES IN MASSACHUSETTS RECEIVE THE EXCHANGE'S QUARTERLY LISTING OF BOTH MATERIAL AVAILABLE FROM GENERATORS AND MATERIAL SOUGHT BY RECYCLERS. DURING AUGUST 1981-JANUARY 1983, THE EXCHANGE TRANSFERRED OVER 5000 TONS OF MATERIAL VALUED AT $600,000. (1 TABLE,)
[ENV]

0173547 *84-005456
EXPECTATIONS OF INDUSTRY AND COMMERCE IN WASTE EXCHANGE ACTIVITY,
FLORIDA CHAMBER OF COMMERCE/ET AL NATL WASTE EXCHANGE CONF, TALLAHASSEE,
MAR 8-9, 83, P34 (6)

CONF PAPER THE NEEDS AND EXPECTATIONS OF FIRMS INVESTIGATING RESOURCE REUSE THROUGH ESTABLISHED WASTE EXCHANGES ARE EXPLORED. EACH SITUATION INVOLVING A SECONDARY MATERIAL AND ITS REUSE POTENTIAL MUST BE VIEWED IN LIGHT OF TECHNICAL, PRACTICAL AND ECONOMIC CONSIDERATIONS. THE NEED FOR CONFIDENTIALITY OF INFORMATION CONCERNING WASTE EXCHANGE CLIENTS IS EXAMINED. LIABILITY APPEARS TO BE THE PRIMARY REASON FOR NONPARTICIPATION OF INDUSTRY IN WASTE TRANSFER. FIRMS ARE CONCERNED WITH PROBLEMS ASSOCIATED WITH THE USE OF WASTES AND SUBSEQUENT DIFFICULTIES IF INCIDENTS OCCUR AS A RESULT OF TRANSPORT OR STORAGE. PARTICIPATION IN WASTE EXCHANGE MUST BE UNCOMPLICATED AND COST-EFFECTIVE.
[ENV]

0173551 *84-005460
LEGAL CONSIDERATIONS AND LEGISLATIVE TRENDS WITH REGARD TO WASTE EXCHANGE,
FLORIDA CHAMBER OF COMMERCE/ET AL NATL WASTE EXCHANGE CONF, TALLAHASSEE,
MAR 8-9, 83, P62 (9)

CONF PAPER FEDERAL REGULATIONS ON THE REUSE OF HAZARDOUS WASTES ARE BEING MODIFIED. PROPOSED CHANGES WILL FACILITATE THE COST-EFFECTIVE RECYCLING OF WASTES. LEGISLATIVE TRENDS AT THE STATE LEVEL EMPHASIZE IMPOSITION OF TAX SURCHARGES IN MUNICIPAL SOLID WASTE. ANOTHER TREND, EVIDENT IN CALIFORNIA, IS THE BANNING OF LIQUID WASTES IN LANDFILLS TO ENCOURAGE RECYCLING. LIABILITY AND DISPOSAL ISSUES AFFECTING THE ADOPTION OF RECYCLING TECHNOLOGY ARE SURVEYED.
[ENV]

0173545 *84-005454
OVERVIEW OF THE WASTE EXCHANGE CONCEPT,
FLORIDA CHAMBER OF COMMERCE/ET AL NATL WASTE EXCHANGE CONF, TALLAHASSEE,
MAR 8-9, 83, P1 (28)

CONF PAPER SOLID WASTE TRANSFER OR EXCHANGE BETWEEN FIRMS, AS AN ALTERNATIVE TO TRADITIONAL TECHNIQUES OF LAND DISPOSAL AND INCINERATION, SHOW PROMISE IN REGIONS POSSESSING THE PROPER INDUSTRIAL MAKE-UP AND CONCENTRATION OF INDUSTRY. THE WASTE EXCHANGE IS AN OPERATION ENGAGED IN TRANSFER OF EITHER INFORMATION CONCERNING WASTE MATERIALS OR THE WASTE MATERIALS THEMSELVES. THE GENERATOR BENEFITS FROM THE POTENTIAL SALE OF RESIDUES, AND THE USER BENEFITS FROM THE REDUCED RAW MATERIAL COST. THE ORGANIZATION AND OPERATION OF CLEARINGHOUSE EXCHANGES AND MATERIAL TRANSFER SYSTEMS ARE OUTLINED. OPERATING EXPERIENCES ARE CULLED FROM THE U.S., CANADA, AND WESTERN EUROPE. (2 DIAGRAMS, 1 TABLE)
[ENV]

0173550 *84-005459
STRATEGIES TO ENCOURAGE AND FACILITATE WASTE EXCHANGE,
FLORIDA CHAMBER OF COMMERCE/ET AL NATL WASTE EXCHANGE CONF, TALLAHASSEE,
MAR 8-9, 83, P58 (4)

CONF PAPER POSITIVE STEPS THAT MAY BE TAKEN BY WASTE EXCHANGES, RECYCLERS, AND GOVERNMENT AGENCIES TO FOSTER AND FACILITATE WASTE EXCHANGE ARE PROFILED. UNDER THE RESOURCE CONSERVATION & RECOVERY ACT OF 1976, THE FEDERAL GOVERNMENT IS REQUIRED TO PROVIDE TECHNICAL AND FINANCIAL ASSISTANCE TO STATES IN THIS ENDEAVOR; STATE STATUTES HAVE ALSO BEEN ENACTED TO ENCOURAGE ALTERNATIVE APPROACHES TO WASTE MANAGEMENT. GOVERNMENT CAN ENCOURAGE WASTE EXCHANGE BY EDUCATION GENERATORS AND THE PUBLIC ABOUT AVAILABLE OPTIONS AND LIABILITY ISSUES. TAX INCENTIVES ARE NEEDED TO PROMOTE RECYCLING. WASTE EXCHANGES AND RECYCLERS CAN PROMOTE INDUSTRY USE OF RECOVERY TECHNOLOGY THROUGH SEMINARS AND TRADE SHOWS.
[ENV]

0173546 *84-005455
WASTE MATERIALS SUITABLE FOR EXCHANGE,
FLORIDA CHAMBER OF COMMERCE/ET AL NATL WASTE EXCHANGE CONF, TALLAHASSEE,
MAR 8-9, 83, P29 (5)

CONF PAPER SOLID WASTE CATEGORIES SUITABLE FOR INCLUSION IN WASTE EXCHANGE AND RECYCLING OPERATIONS ARE SURVEYED. IN ADDITION TO THE DIRECT TRANSFER OF SOME MATERIALS, FIRMS HAVE INVESTIGATED PROCESS MODIFICATIONS TO ENHANCE THE REUSE POTENTIAL OF BY-PRODUCTS GENERATED DURING MANUFACTURING PROCESSES. MODIFICATIONS INCLUDE MATERIALS SUBSTITUTION, SOURCE SEPARATION OF WASTES, AND TIGHTER PROCESS CONTROL TO EXPLOIT WASTE STREAMS. IN-PLANT EDUCATION IS CONSIDERED AN ESSENTIAL STEP IN THE RECYCLING PROCESS, AS OPPORTUNITIES FOR RESOURCE RECOVERY ARE NOT ALWAYS RECOGNIZED.
[ENV]

0165309 *83-004064
BUYING AND SELLING THROUGH A WASTE EXCHANGE,
BANNING WALKER
NORTHEAST INDUSTRIAL WASTE EXCHANGE, NY,
BIOCYCLE, NOV-DEC 82, V23, N6, P48 (2)

SURVEY REPORT THE NORTHEAST INDUSTRIAL WASTE EXCHANGE WAS ESTABLISHED IN SYRACUSE, NY, IN 1981 AS A CENTRALIZED INFORMATION CLEARINGHOUSE FOR COLLECTING, DISPLAYING, AND DISSEMINATING DATA ABOUT WASTE MATERIALS AVAILABLE FROM GENERATORS AND SOUGHT BY POTENTIAL USERS. SOME BASIC SERVICES PROVIDED BY THE EXCHANGE INCLUDE: RECEIVING COMPANY LISTINGS FOR WASTES, PUBLISHING A QUARTERLY CATALOG OF THE WASTES, DISTRIBUTING THE CATALOG FREE OF CHARGE, AND FURTHER AIDING IN RECYCLING. THE SUCCESSFUL OPERATION OF THE FACILITY SINCE ITS INCEPTION IS SURVEYED.
[ENV]

0158769 *82-004525
RECYCLING HAZARDOUS WASTE AND THE WASTE EXCHANGE OPTION,
DURSO-HUGHES, KATHERINE ; LEWIS JAMES
ENV ACTION FOUNDATION,
ENVIRONMENT, MAR 82, V24, N2, P14 (12)

FEATURE ARTICLE STATES AND THE FEDERAL GOVERNMENT ARE ADOPTING POLICIES-INCLUDING FEE STRUCTURES, TAX INCENTIVES, BONDS, AND SPEEDY PERMIT PROCEDURES-TO CREATE INCENTIVES FOR CHEMICAL RECYCLING AND RECOVERY OF HAZARDOUS WASTES. FACTORS DETERMINING THE FEASIBILITY OF RECYCLING ARE THE COMPLEXITY OF THE WASTE STREAM, TECHNICAL CAPACITY OF THE INVOLVED COMPANIES, RELATIVE LOCATION OF THE PLANT AND THE MARKET FOR POTENTIAL USERS, AND ECONOMIC INCENTIVES AND DISINCENTIVES. TWO TYPES OF WASTE EXCHANGES-A PASSIVE INFORMATION CLEARINGHOUSE AND AN ACTIVE WASTE MATERIAL EXCHANGE FOR RECYCLING RAW MATERIALS AND PROCESSING RESIDUES-ARE EXAMINED. (3 PHOTOS, 22 REFERENCES, 1 TABLE)
[ENV]

82-02270
Campus Waste Brokers
ANON.
Address Not Stated
SOLID WASTES MGMT VOL. 24, NO. 11, pp. 34-35, Publ.Yr: 1981
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

The main advantage of the chemical waste exchange program is that these chemicals are removed from the hazardous waste stream. In addition, off-campus disposal and its costs are eliminated, the concept of recycling is promoted, and university chemical costs are reduced.
[POL]

0149696 *81-002670
WASTE EXCHANGES, BACKGROUND INFORMATION,
EPA REPORT SW-887.1, DEC 80 (173)

SPECIAL REPORT DATA CONCERNING WASTE EXCHANGES AND THE ACTIVITIES OF RELEVANT COMPANIES ARE REPORTED. SUCH WASTE EXCHANGES ARE ONE MEANS OF RESOURCE RECOVERY AND SOLID WASTE REDUCTION, AS ONE COMPANY WILL EXCHANGE RECOVERABLE MATERIALS WITH ANOTHER. ALL OF THE KNOWN WASTE EXCHANGES CURRENTLY IN OPERATION BOTH IN AND OUTSIDE OF THE U.S. ARE SURVEYED. WASTE MATERIALS EXCHANGED AMONG THESE COMPANIES INCLUDE ORGANIC CHEMICALS, SOLVENTS, OILS, FATS, WAXES, ACIDS, ALKALIS, INORGANIC CHEMICALS, METALS, METAL CONTAINING SLAGS, PLASTICS, TEXTILES, LEATHER, RUBBER, WOOD AND PAPER PRODUCTS, CATALYSTS, FOOD PROCESSING WASTES, MINERALS, WASTE OIL, GLASS, AND USED CONTAINERS AND EQUIPMENT. (20 DIAGRAMS, 3 MAPS, 14 REFERENCES, 19
[ENV]

GENERAL

241
Recycling vs. treatment and disposal of metallic waste: a comparison
Tate, J.
PC FAB., pp. 50-55, May 1986

Options available to printed circuit manufacturers for disposing of concentrated metallic waste are presented.
[MN]

246
Recovery, recycle, and reuse of hazardous waste
Noll, K.E.; Haas, C.N.; Patterson, J.W.
JOURNAL OF THE AIR POLLUTION CONTROL ASSOC.VOL. 36, NO. 10, pp. 1163-1168, October 1986

This article reviews quantities and types of hazardous waste in the U.S., including those that may have economic recovery value (e.g., organic liquids, metals from sludges), as well as options to encourage those that may not.
[MN]

0187247 *87-008164
A REVIEW OF ALTERNATIVE TREATMENT PROCESSES FOR METAL BEARING HAZARDOUS WASTE STREAMS,
GROSSE DOUGLAS W.
EPA, OH,
APCA J, MAY 86, V36, N5, P603(12)

JOURNAL ARTICLE CURRENT TREATMENT PRACTICES THAT ARE BEING USED OR CONSIDERED FOR USE AT ON-SITE OR COMMERCIAL HAZARDOUS WASTE FACILITIES TO TREAT METAL AND CYANIDE WASTES ARE DESCRIBED. TOXIC METAL REMOVAL CAN BE EFFECTED BY PRECIPITATION WITH MAGNESIUM OXIDE, LIME, OR SULFIDES. CHEMICAL REDUCTION IS MOST EFFECTIVE WHEN THE AQUEOUS METAL WASTES ARE RELATIVELY DEVOID OF ORGANIC COMPOUNDS; CHROMIUM AND SELENIUM REDUCTION STRATEGIES ARE BRIEFLY SURVEYED. HAZARDOUS WASTE STABILIZATION, SOLIDIFICATION, BIOLOGICAL TREATMENT, CYANIDE DESTRUCTION, MEMBRANE PROCESSES, AND ELECTROLYTIC RECOVERY OPTIONS ARE ALSO EXPLAINED.
[ENV]

1189208 PB86-178431/XAB
Directory of Commercial Hazardous Waste Treatment and Recycling Facilities
Bassi, J.
Environmental Protection Agency, Washington, DC. Office of Solid Waste.
Corp. Source Codes: 031287518
Sponsor: Development Planning and Research Associates, Inc., Manhattan, KS.
Report No.: EPA/530/SW-85/019
Dec 85 126p
Prepared in cooperation with Development Planning and Research Associates, Inc., Manhattan, KS.
Languages: English
NTIS Prices: PC A07/MF A01 Journal Announcement: GRAI8613
Country of Publication: United States

The document provides a listing of commercial facilities that accept hazardous waste for treatment and/or recycling. For each commercial facility, the directory provides the facility name, address, telephone number, contact, categories of treatment (i.e. tanks, surface impoundments, incineration, and other), and when available, types of hazardous waste managed at the facility.
[NTIS]

86-08264
Emerging treatment methodologies for hazardous waste control
Peters, R.W.
Purdue Univ., West Lafayette, IN, USA
American Institute of Chemical Engineers 1985 Annual Meeting Chicago, IL (USA) 10-15 Nov 1985
AMERICAN INSTITUTE OF CHEMICAL ENGINEERS 1985 ANNUAL MEETING vp,
AICHE, 345 EAST 47TH STREET, NEW YORK, NY 10017 (USA)
SUMMARY LANGUAGE - ENGLISH; Summary only.
Languages: ENGLISH

Wastes containing heavy metals or toxic organics such as pesticide residues persist and remain toxic in the environment for long periods of time. This paper reviews the current technologies available for treating hazardous wastes including separation and concentration pretreatment, biological degradation, chemical treatment, ultimate disposal, and energy and material recovery.
[POL]

85-06815
Impact of recycling on the environment
Bever, M.B.; Henstock, M.E. (eds.); Beardsley, D.
Integrated Environ. Manage. Program
Conference on Recycling: Opportunities and Constraints Washington, DC (USA) 17-19 Jul 1984
CONSERV. RECYCLING VOL. 8, NO. 3-4, PP. 387-391, Publ.Yr: 1985
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

The legislative history of RCRA shows that Congress clearly intended EPA to have authority to regulate recycling activity as part of hazardous waste management. This is inherent in the "cradle-to-grave" concept on which RCRA is build. While The author wants to encourage the beneficial use of recycling, he has to acknowledge that some recycling activities pose a much greater potential for harm than others. He is particularly concerned about five types of recycling activity: 1. Anything that involves direct placement of wastes on land; 2. Burning waste or waste-derived fuel for energy recovery; 3. Processes that regenerate wastes, or recovery material from wates; 4. Speculative accumulation of wastes that are potentially recyclable, but for which no current market exists; and 5. Accumulation without sufficient amounts of stored material being recycled.
[POL]

0183379 *86-047534
DEACTIVATION OF HAZARDOUS CHEMICAL WASTES,
TUCKER SAMUEL P. ; CARSON GEORGE A.
(NIOSH, OH) AND ; (NIOSH, MO),
ENV SCIENCE & TECHNOLOGY, MAR 85, V19, N3, P215(6)

JOURNAL ARTICLE THE SCIENTIFIC COMMUNITY IS CONDUCTING RESEARCH INTO WAYS TO DEACTIVATE HAZARDOUS WASTES IN ORDER THAT THE WASTES CAN BE REUSED, CONVERTED INTO LESS HAZARDOUS MATERIALS, OR STABILIZED SO THAT THEY DO NOT REPRESENT A THREAT TO PEOPLE OR THE ENVIRONMENT. CHEMICAL CONVERSION IS A PROCESS BY WHICH A WASTE IS TRANSFORMED TO AT LEAST ONE SUBSTANCE THAT IS LESS HAZARDOUS THAN THE ORIGINAL MATERIAL. WET OXIDATION, OZONIZATION, AND ELECTROCHEMICAL OXIDATION PROCESSES ARE BEING PURSUED. PROCESSES FOR REMOVAL OF HAZARDOUS CONSTITUENTS INCLUDE PRECIPITATION, ACTIVATED CARBON ADSORPTION, AND ULTRAFILTRATION. VARIOUS METHODS OF WASTE STABILIZATION AND SOLIDIFICATION ARE ALSO COVERED.
[ENV]

83-03535

Hazardous waste management for the 80's

Sweeney, T.L.; Bhatt, H.G.; Sykes, R.M.; Sproul, O.J.
Address not stated
Publ.Yr: 1982
ANN ARBOR SCI., 10 TOWER OFFICE PARK, WOBURN, MA 01801, USA
Languages: ENGLISH

1. A Service Industry Perspective 2. Ohio's Hazardous Waste Program 3. The Hazardous Waste Management Triangle 4. Reuse and Recycle of Hazardous Waste Material within the Steel Industry 5. Classification and Management of Process Wastes for the Tennessee Synfuels Associates Coal-to-Gasoline Facility 6. Determination of Disposal Sites for PCB Contaminated Material Dredged from the Hudson River Bed 7. Hazardous Waste Management at PPG's Deep Limestone Mine, Norton, Ohio.
[POL]

132

Establishing a program for pollution control, part 2: recovery options

Roy, C.H.
PLATING AND SUFACE FINISHING, pp. 29-31, November 1981

Selecting a recovery system requires knowledge, common sense, and caution. Many of the pros and cons of recovery techniques are explored.
[MN]

178

Recycling hazardous wastes - the only way to go

Palmer, P.
CBE ENVIRONMENTAL REVIEW, pp. 13-15, October-November 1980

Chemical recycling company began using the concept that any excess chemical (hazardous waste) can be recycled. Hazardous waste regulations condone burying hazardous wastes and impede recycling.
[MN]

INCENTIVES/DISINCENTIVES

87-00925

The case for stopping wastes at their source

Martin, L.
Hazardous Waste Minimization Project, Inst. Local Self-Reliance
ENVIRONMENT VOL. 28, NO. 3, pp. 35-37, Publ.Yr: 1986
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Improved industrial profitability has traditionally appeared to be at odds with improved environmental quality. These two objectives can be combined, surprisingly, when industries implement waste-minimizing strategies. Hazardous-waste source reduction is a concept and practice that goes by many names. Some of the more common ones include pollution prevention, low- and non-waste technology, source or waste reduction, and waste minimization. The goal is elimination of the manufacturing by-products that must be treated as waste. The objectives are to avoid the inefficiency in production that results in wasted resources, and to minimize the emission of by-products to the environment. Waste minimization alleviates disposal costs, liability risk, and resource costs. Clearly, the result is a reduced insult and burden on the natural environment and an increased profitability for business. Waste, after all, is only a misused and misplaced resource.
[POL]

1198737 PB86-195658/XAB

Alternative Techniques for Managing Solvent Wastes

(Journal article)
Blaney, B. L.
Environmental Protection Agency, Cincinnati, OH. Hazardous Waste Engineering Research Lab.
Corp. Source Codes: 034122080
Report No.: EPA/600/J-86/040
1986 13p
Pub. in Jnl. of the Air Pollution Control Association, v36 n3 p275-285 Mar 86.
Languages: English Document Type: Journal article
NTIS Prices: PC A02/MF A01 Journal Announcement: GRAI8617
Country of Publication: United States

There are economic and regulatory incentives for considering alternatives to the direct land disposal of solvent-bearing hazardous waste streams (EPA Hazardous Waste Codes: F001, F002, F003, F004, and F005). These alternatives include recycle/reuse (including use as a fuel substitute), destruction of a stream's solvent component, and treatment prior to land disposal. The paper reviews these three waste management alternatives and discusses their applicability to solvent waste streams having various physical characteristics.
[NTIS]

86-03880

Treatment technologies for hazardous wastes: Part II. Alternative techniques for managing solvent wastes

Blaney, B.L.
Hazardous Waste Eng. Res. Lab., U.S. EPA, Cincinnati, OH, USA
J. AIR POLLUT. CONTROL ASSOC VOL. 36, NO. 3, pp. 275-285, Publ.Yr: 1986
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

There are economic and regulatory incentives for considering alternatives to the direct land disposal of solvent-bearing hazardous waste streams (EPA Hazardous Waste Codes: F001, F002, F003, F004, and F005). These alternatives include recycle/reuse (including use as a fuel substitute), destruction of a stream's solvent component, and treatment prior to land disposal. This paper reviews these three waste management alternatives and discusses their applicability to solvent waste streams having various physical characteristics. Seven waste treatment techniques which may be used to handle solvent wastes are described: incineration, agitated thin-film evaporation, fractional distillation, steam stripping, wet oxidation, carbon adsorption, and activated sludge biological treatment.
[NTIS]

86-03841

The hazardous waste generator's perspective

Daniels, S.L.
Dow Chem. Co., Midland, MI, USA
American Institute of Chemical Engineers 1985 Annual Meeting Chicago, IL (USA) 10-15 Nov 1985
AMERICAN INSTITUTE OF CHEMICAL ENGINEERS 1985 ANNUAL MEETING vp,
AICHE, 345 EAST 47TH STREET, NEW YORK, NY 10017 (USA)
SUMMARY LANGUAGE - ENGLISH; Summary only.
Languages: ENGLISH

Generators of hazardous waste have a substantial incentive to reduce quantities of hazardous waste through onsite recycle and treatment. However, not all proposed technology is suitable and certain regulations reduce the incentive (e.g., by making it difficult to delist a hazardous waste).
[POL]

Economic incentives for the reduction of hazardous wastes

ICF Consulting Assoc., Inc.
Prepared for the California Department of Health Services, Alternative Technology Section, 714/744 P Street, Sacramento, CA 95814, December 1985

This report presents the results of ICF's analysis for developing a state economics incentives program for reducing the amount and toxicity of hazardous wastes generated in California. Based on an analysis of existing barriers to waste reduction and the alternative incentive mechanisms, this study recommends the use of grants to encourage waste audits, information dissemination, and research, development, and demonstration of waste reduction technologies.
[CA]

0186647 *87-003602
OPPORTUNITIES FOR LOCAL GOVERNMENT,
SHERRY SUSAN
GOLDEN EMPIRE HEALTH PLANNING CENTER REPORT, OCT 85, P237(85)

ASSN REPORT LOCAL GOVERNMENT, SUPPORTED AND ENERGIZED BY LOCAL COMMUNITY LEADERS, CAN AND MUST TAKE AN ACTIVE ROLE IN PROTECTING ITS CITIZENS AND RESOURCES AGAINST EXPOSURE TO TOXIC SUBSTANCES. COMMUNITIES MUST ACT TO ENSURE THAT CHEMICAL-INTENSIVE FIRMS EMPLOY TECHNOLOGIES WHICH WILL PREVENT AND REDUCE THE RELEASE OF INDUSTRIAL CHEMICALS INTO THE ENVIRONMENT. OVER 30 SPECIFIC POLICY OPTIONS AVAILABLE TO LOCAL GOVERNMENTS ARE EXPLORED. THEY INCLUDE SUCH BROAD STRATEGIES AS ZONING AND SITING, HAZARDOUS MATERIALS ORDINANCES, AMENDMENTS TO EXISTING REGULATIONS, USE OF EXISTING INSTITUTIONS AND RESOURCES, AND VARIOUS FINANCIAL INCENTIVES. INDUSTRY SHOULD ASSUME THE PRIMARY RESPONSIBILITY FOR FINANCING THESE PROGRAMS.
[ENV]

0184879 *86-060787
THE POTENTIAL OF THE THEORY OF COMPENSATION FOR MITIGATING PUBLIC OPPOSITION TO HAZARDOUS WASTE TREATMENT FACILITY SITTING: SOME EVIDENCE FROM FIVE MASSACHUSETTS COMMUNITIES,
PORTNEY KENT E.
TUFTS UNIV,
POLICY STUDIES J, SEP 85, V14, N1, P81(9)

JOURNAL ARTICLE THE THEORY OF ECONOMIC COMPENSATION IN HAZARDOUS WASTE FACILITY SITTING IS EXPLAINED. THE WAY IN WHICH RESIDENTS OF FIVE MASSACHUSETTS COMMUNITIES REACT TO PROPOSALS DIRECTED AT OVERCOMING LOCAL OPPOSITION TO SITTING A HAZARDOUS WASTE TREATMENT FACILITY IS ANALYZED. RESIDENTS WERE ASKED TO RESPOND TO 11 SPECIFIC PROPOSALS DESIGNED TO ALLAY PEOPLE'S FEARS AND TO COMPENSATE THEM FOR TANGIBLE LOSSES OR COSTS THEY MIGHT INCUR. NONE OF THE ECONOMIC INCENTIVE PROPOSALS PRODUCED SIGNIFICANT ATTITUDINAL CHANGE. PROPOSALS INTENDED TO ALLAY FEARS BY REDUCING RISK SEEM TO HOLD MUCH GREATER POTENTIAL FOR SUCCESSFULLY SITTING A HAZARDOUS WASTE TREATMENT FACILITY.
[ENV]

0181772 *86-039075
ASSESSING THE VIABILITY OF MARKETABLE PERMIT SYSTEMS: AN APPLICATION IN HAZARDOUS WASTE MANAGEMENT,
OPALUCH JAMES J. ; KASHMANIAN RICHARD M.
UNIV OF RHODE ISLAND,
LAND ECONOMICS, AUG 85, V61, N3, P263(9)

JOURNAL ARTICLE THE USE OF ECONOMIC INCENTIVES FOR POLLUTION CONTROL IS ASSESSED FOR THE CASE OF HAZARDOUS WASTE MANAGEMENT. A STRATEGY THAT ALLOWS FLEXIBLE RESPONSE BY FIRMS IS EVALUATED IN TERMS OF EFFICIENCY BENEFITS. THE COST OF ACHIEVING FIXED STANDARDS OF AGGREGATE EMISSIONS THROUGH THE USE OF A MARKETABLE PERMIT SCHEME IS ANALYZED. THIS COST IS COMPARED TO THE COST OF ACHIEVING AN IDENTICAL LEVEL OF EMISSIONS THROUGH THE TECHNOLOGY-FORCING APPROACH PROPOSED BY EPA, THUS CALCULATING POTENTIAL EFFICIENCY BENEFITS. FOR THE CASE OF HAZARDOUS WASTE MANAGEMENT IN THE RHODE ISLAND JEWELRY INDUSTRY, TOTAL INDUSTRY SAVINGS ON THE ORDER OF 50% RESULT FROM THIS EFFICIENT APPROACH TO POLLUTION CONTROL.
[ENV]

0180564 *85-030183
REDUCING AVERSION TO LIVING NEAR HAZARDOUS WASTE FACILITIES THROUGH COMPENSATION AND RISK REDUCTION,
SWARTZMAN DANIEL ; CROKE KEVIN; SWIBEL SHERI
UNIV OF ILLINOIS,
J ENV MANAGEMENT, JAN 85, V20, N1, P43(8) RESEARCH ARTICLE

PUBLIC OPPOSITION TO THE SITING OF HAZARDOUS WASTE FACILITIES MUST BE AMELIORATED TO ASSURE THE SUCCESS OF GOVERNMENTAL PROGRAMS TO MANAGE SUCH WASTES. AN EMPIRICAL STUDY DETERMINED WHETHER PUBLIC OPPOSITION TO THE SITING OF WASTE FACILITIES MIGHT BE REDUCED THROUGH PROPOSED PROGRAMS OF COMPENSATION OR ENHANCED ENVIRONMENTAL MONITORING. COMPENSATION PROVISIONS COMPRISED PROPERTY TAX REDUCTIONS AND PAYMENT OF A USER FEE TO COMMUNITIES. A SIGNIFICANT NUMBER OF SUBJECTS IMPLIED THEY WERE WILLING TO MOVE CLOSER TO LANDFILLS AFTER BEING OFFERED INDUCEMENTS. (4 DIAGRAMS, 8 REFERENCES, 4 TABLES,)
[ENV]

0174878 *84-006787
STATE EXPERIENCES WITH TAXES ON GENERATORS OR DISPOSERS OF HAZARDOUS WASTE,
GAO REPORT RCED-84-146, MAY 4, 84, (59)

FED GOVT REPORT STATE TAXES ON GENERATORS OR DISPOSERS OF HAZARDOUS WASTE WERE ANALYZED IN THREE OF ELEVEN STATES THAT HAVE TAX PROGRAMS SIMILAR TO THOSE PROPOSED BY THE FEDERAL GOVERNMENT. THE TAX REGIMES EVALUATED WERE NEW YORK STATE'S SUPERFUND, NEW HAMPSHIRE'S CLEANUP FUND, AND CALIFORNIA'S HAZARDOUS WASTE SUBSTANCE & CONTROL ACCOUNT. THESE PROGRAMS HAVE NOT COLLECTED THE REVENUES ANTICIPATED, NOR HAVE THE STATES DETERMINED IF THE TAX ACHIEVED ITS OBJECTIVES IN ENCOURAGING MORE DESIRABLE WASTE MANAGEMENT PRACTICES. PROGRAM ADMINISTRATORS WERE CONCERNED THAT A SIMILAR FEDERAL TAX MAY REDUCE STATE TAX REVENUE OR INCREASE THE INCENTIVE TO ILLEGALLY DISPOSE OF HAZARDOUS WASTE. (7 TABLES)
[ENV]

0178214 *85-016409
THE FEASIBILITY AND DESIRABILITY OF ALTERNATIVE TAX SYSTEMS FOR SUPERFUND: CERCLA SECTION 301(A)(1)(G) STUDY,
EPA REPORT, DEC 84 (154)

FED GOVT REPORT ALTERNATIVE TAX OPTIONS THAT COULD BE USED TO FINANCE THE SUPERFUND RESPONSE PROGRAM ARE EVALUATED IN ACCORDANCE WITH SECTION 301(A)(1)(G) OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY ACT OF 1980. FIVE ALTERNATIVE TAX OPTIONS, ALL DESIGNED TO RAISE $1 BILLION ANNUALLY, ARE ANALYZED. THESE ARE A FEEDSTOCK TAX WITH MODIFIED RATES, A FEEDSTOCK TAX WITH MODIFIED RATES AND SUBSTANCES, A WASTE-END TAX, A FEEDSTOCK TAX AND NON-INCENTIVE WASTE-END TAX, AND A FEEDSTOCK TAX AND INCENTIVE WASTE-END TAX. FEEDSTOCK TAXES ARE GENERALLY NOT CAPABLE OF CREATING INCENTIVES FOR SIGNIFICANT CHANGES IN WASTE MANAGEMENT PRACTICE. (NUMEROUS TABLES)
[ENV]

186
Liability associated with waste exchanges
Dunn, G.; Ginnis, N.B.
North Carolina Department of Natural Resources and
Community Development, June 1984

Potential waste exchange liability is compared with liability associated with use of other waste management options, viewed from the perspective of the three possible waste exchange participants.
[MN]

0176774 *85-007812
MOTIVATION AND INCENTIVES FOR ENVIRONMENTAL PROTECTION BY AMERICAN BUSINESS,
ALTER HARVEY
US CHAMBER OF COMMERCE,
INDUSTRY & ENV, JUL-SEP 84, V7, N3, P40(5)

JOURNAL ARTICLE THE HISTORY OF ENVIRONMENTALISM IN THE U.S. IS CHRONICLED, AND THE NEED TO BALANCE INDUSTRIAL ECONOMIC GROWTH WITH ENVIRONMENTAL PROTECTION IS EMPHASIZED. THE NATURE OF U.S. ENVIRONMENTAL LAWS IS EXAMINED, AND A BUSINESS VIEW OF MOTIVATION AND INCENTIVES FOR COMPLIANCE WITH SUCH STATUS IS PRESENTED. (4 PHOTOS, 10 REFERENCES, 4 TABLES,)
[ENV]

0175782 *85-003485
SWEET FOR THE SOUR: INCENTIVES IN ENVIRONMENTAL MEDIATION,
SORENSEN JOHN H. ; SODERSTROM JON; CARNES SAM A.
ORNL,
ENV MANAGEMENT, JUL 84, V8, N4, P287(8)

JOURNAL ARTICLE PUBLIC CONFLICT ARISES IN THE SITING OF FACILITIES WITH UNDESIRABLE ENVIRONMENTAL CHARACTERISTICS. THE PROBLEM IS FREQUENTLY EXACERBATED DURING EFFORTS TO RESOLVE THE CONFLICT AND MAKE SITING DECISIONS. AN APPROACH TO CONFLICT RESOLUTION IS ENVIRONMENTAL MEDIATION. THE USE OF INCENTIVE SYSTEMS AS A MEANS OF ACHIEVING EQUITY IN SUCH MEDIATION IS EXPLORED. OBNOXIOUS AND NOXIOUS CHARACTERISTICS OF FACILITIES ARE EXAMINED AS THE BASIS OF CONFLICTS. MITIGATION, COMPENSATION, REWARD, AND PARTICIPATION ARE DISCUSSED AS FOUR TYPES OF INCENTIVES. (32 REFERENCES, 5 TABLES,)
[POL]

85-00641

Governments and source reduction of hazardous waste

O'Hare, M.

Energy and Environ. Policy Cent., John F. Kennedy Sch. Gov., Harvard Univ., Cambridge, MA 02138, USA

HAZARDOUS WASTE VOL. 1, NO. 3, pp. 443-451, Publ.Yr: 1984

SUMMARY LANGUAGE - ENGLISH; Public policy issue.

Languages: ENGLISH

Governments considering action to encourage source reduction of hazardous wastes should proceed with caution. Only research and information programs are certain to improve efficiency in waste generation decisions by generators. Other programs, such as waste taxes, subsidies for source reduction, or regulations are likely to cause more problems than they solve. These problems are inherent in the nature of industrial waste or the program type or both.

[POL]

0175388 *85-001759

ECONOMIC AND REGULATORY INCENTIVES FOR HAZARDOUS WASTE REDUCTION IN MASSACHUSETTS,

FINKEL ADAM M.

HARVARD UNIV,

MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF, MA, OCT 13, 1983 P44(19)

CONF PAPER ENVIRONMENTAL OFFICIALS IN MASSACHUSETTS HAVE A PARTICULAR INTEREST IN PROMOTING HAZARDOUS WASTE REDUCTION, DUE TO PUBLIC RESOLVE TO OPPOSE NEW TREATMENT/DISPOSAL FACILITIES UNTIL GOVERNMENT AND INDUSTRY COOPERATE TO MINIMIZE EXCESS WASTE GENERATION. MANY FIRMS CAN REALIZE ECONOMIC ADVANTAGES FROM WASTE REDUCTION, BUT INFORMATIONAL AND FINANCIAL BARRIERS IMPEDE APPROPRIATE TECHNOLOGY ADOPTION. TWO PROMISING APPROACHES FOR STATE GOVERNMENT INTERVENTION IN THIS FIELD ARE PURSUED. A TAX CAN BE IMPOSED ON THE GENERATION OF ALL HAZARDOUS WASTES TO RAISE THE COST OF WASTE PRODUCTION AND PROVIDE REDUCTION INCENTIVES. INCENTIVE SCHEMES TO INDUCE ADOPTION OF BEST REDUCTION TECHNOLOGIES ARE ALSO COVERED. (15 REFERENCES,)

[ENV]

0175390 *85-001764
HAZARDOUS WASTE SOURCE REDUCTION AND A WASTE-END SUPERFUND TAX,
HIRSCHHORN JOEL S.
OTA,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF,
MA, OCT 13, 83, P36(7)

CONF PAPER THE FEDERAL SUPERFUND PROGRAM CAN BE DIRECTED TOWARD ENCOURAGING WASTE REDUCTION, WHICH IS CONSIDERED AS IMPORTANT AS CLEANING UP HAZARDOUS WASTE SITES. THE CREATION OF MORE UNCONTROLLED HAZARDOUS WASTE CAN BE PREVENTED BY MOTIVATING INDUSTRY TO EMPLOY SOURCE REDUCTION TECHNOLOGY. A DISTINCTION IS MADE BETWEEN A WASTE-END AND A FEEDSTOCK TAX, AND THE MERITS OF EACH CONCEPT ARE DISCUSSED. HAZARDOUS WASTE GENERATED AT INDUSTRIAL FACILITIES WOULD BE TAXED UNDER THE WASTE-END TAX. WITH A FEEDSTOCK TAX, SOME CHEMICAL OR PETROLEUM FEEDSTOCKS WOULD BE TAXED.
[ENV]

0173549 *84-005458
INCENTIVES/BARRIERS TO SUCCESSFUL EXCHANGE,
FLORIDA CHAMBER OF COMMERCE/ET AL NATL WASTE EXCHANGE CONF, TALLAHASSEE,
MAR 8-9,83, P52 (6)

CONF PAPER BARRIERS TO SUCCESSFUL EXCHANGE OF INDUSTRIAL WASTES APPEAR TO OUTWEIGH INCENTIVES. UNCERTAINTY CONCERNING THE SUITABILITY OF WASTES FOR RECYCLING AND THE APPLICABILITY OF DIVERSE REGULATIONS PREVENT GENERATORS FROM PARTICIPATING IN EXCHANGE PROGRAMS. CRADLE-TO-GRAVE LIABILITY MAKES GENERATORS HESITANT TO RELINQUISH CONTROL OF HAZARDOUS WASTE STREAMS. UNFAVORABLE ECONOMICS, COMPLICATED AND CONSTANTLY CHANGING REGULATIONS, AND TECHNICAL IMPEDIMENTS ARE ALSO CITED AS BARRIERS. INCENTIVES INCLUDE THE CONSERVATION OF ENERGY BY USING EXISTING RATHER THAN NEW MATERIALS. SAVINGS IN COST OVER THE COST OF DISPOSAL CAN ALSO BE REALIZED.
[ENV]

0175389 *85-001761
SOURCE REDUCTION OF HAZARDOUS AND TOXIC WASTES: OBSTACLES AND INCENTIVES,
SAROKIN DAVID
INFORM, NEW YORK,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF,
MA, OCT 13, 83, P63(9)

CONF PAPER A MAJOR IMPEDIMENT IN PROMOTING HAZARDOUS WASTE REDUCTION TECHNOLOGY IS LACK OF INFORMATION. FEW CONTRIBUTIONS HAVE BEEN MADE BY EPA OR RESEARCHERS TO THE LITERATURE IN THIS FIELD. OTHER OBSTACLES AND INCENTIVES TO SOURCE REDUCTION ARE EXAMINED THROUGH CASE STUDY EXAMPLES OF INDUSTRIAL WASTE MANAGEMENT. REGULATORY RESTRICTIONS ON AN ADHESIVES MANUFACTURER PROMPTED DRAMATIC WASTE REDUCTION PRACTICES IN TERMS OF WASTEWATER AND SLUDGE GENERATION. ECONOMIC CONSIDERATIONS AT A PETROCHEMICAL PLANT LED TO THE CONTROL OF FUGITIVE AIR EMISSIONS FROM EQUIPMENT THAT COULD EASILY BE MAINTAINED. THE ABSENCE OF WASTE REDUCTION PRACTICES AT ANOTHER CHEMICAL PLANT IS ATTRIBUTED TO LEGAL LOOPHOLES IN MOST ENVIRONMENTAL STATUTES. (2 DIAGRAMS,)
[ENV]

0167861 *83-006521
MICHIGAN'S EXPERIENCE WITH MANDATORY DEPOSITS ON BEVERAGE CONTAINERS ,
PORTER RICHARD C.
UNIV OF MICHIGAN,
LAND ECONOMICS, MAY 83, V59, N2, P177 (18)

IN 1978, MICHIGAN'S BOTTLE BILL, REQUIRING REDEEMABLE DEPOSITS ON CONTAINERS OF PACKAGED BEVERAGES, WAS LAUNCHED. THE MEASURE WAS INTENDED TO REDUCE LITTER AND REDUCE THE COST OF THE CONTAINERS. THE BENEFITS DUE TO LITTER AND SOLID WASTE REDUCTIONS ARE ASSESSED, AND AN ESTIMATE OF THE COSTS IN CONSUMER INCONVENIENCE IS GENERATED. MICHIGAN'S BEVERAGE PRICES INCREASED AS A RESULT OF THE LEGISLATION, AND A CONSUMPTION DECLINE FOLLOWED. THE NET TOTAL COST OF THE CONSUMER INCONVENIENCE OCCASIONED BY THE INTRODUCTION OF MANDATORY DEPOSITS IS $27 MILLION, OR $3 PER STATE RESIDENT. (3 GRAPHS, 33 REFERENCES, 7 TABLES)
[ENV]

0163063 *83-001893
OVERCOMING LOCAL OPPOSITION TO HAZARDOUS WASTE FACILITIES: THE MASSACHUSETTS APPROACH,
BACOW, LAWRENCE
HARVARD ENV LAW REVIEW, 1982, V6, N2, P265 (41)

JAMES R. SURVEY REPORT THE SAME PUBLIC CONCERN THAT HAS PROMPTED NEW LEGISLATION GOVERNING HAZARDOUS WASTES HAS ALSO FRUSTRATED DEVELOPMENT OF NEW FACILITIES. THE SUCCESS OF LOCAL OPPOSITION HAS CREATED A DILEMMA: EFFORTS TO END ILLEGAL AND UNSAFE DUMPING ARE DOOMED UNLESS NEW, SAFE DISPOSAL FACILITIES CAN BE BUILT, BUT NO COMMUNITY APPEARS WILLING TO ACCEPT A NEW HAZARDOUS WASTE FACILITY. SEVERAL STATES HAVE ENACTED MEASURES TO ASSIST DEVELOPERS IN FINDING NEW SITES IN AN ATTEMPT TO RESOLVE THIS DILEMMA. THE INNOVATIVE MASSACHUSETTS SITTING STATUTE, WHICH REQUIRES DEVELOPERS TO NEGOTIATE COMPENSATION AGREEMENTS WITH HOST COMMUNITIES, IS DESCRIBED. AN ALTERNATIVE APPROACH OF PREEMPTION OF LOCAL AUTHORITY IS ALSO CONSIDERED.
[ENV]

109
Considering recovery and reuse
Toller, W.H.; Innes, W.P.
PLATING AND SURFACE FINISHING, pp. 26-27, February 1982

The benefits of recovery and reuse are a short payback period, operating costs lower than those associated with conventional waste treatment, reduced waste consumption, and reduced waste generation.
[MN]

113
What does disposal really cost?
Smith, D.W.; Roy, C.H.
PLATING AND SURFACE FINISHING, pp. 40-45, August 1982

The value of recovery technology is discussed for the electroplating industry. Conservation and recovery techniques can be adopted to reduce costs.
[MN]

123
Resource recovery - a byproduct of hazardous waste incineration
Santoleri, J.J.
ENVIRONMENTAL PROGRESS, VOL. 1, NO. 4, pp. 268-273, November 1982

In the plastics industry, acid recovery systems enable a much more rapid write-off of capital expenditures for waste incineration systems.
[MN]

150
Does recovery reduce treatment needs?
Steward, F.A.
Third Conf. Adv. Poll. Cont. Met. Fin. Ind., pp. 30-32, February 1982

Companies purchasing treatment facilities should look for reduction only in operating costs, treatment chemicals, labor and sludge disposal. Actual case data illustrates what problems can arise.
[MN]

0158761 *82-004517
INDUSTRIAL WASTE REDUCTION AND RECOVERY,
CAMPBELL MONI
ALTERNATIVES, WINTER 82, V10, N2-3, P59 (5)

FEATURE ARTICLE IN RECENT YEARS, MANY SMALL BUSINESSES HAVE BEGUN TO REALIZE THAT REDUCING POLLUTION CAN RAISE THEIR COMPANY PROFITS. IN 1975, THE 3M COMPANY INITIATED A POLLUTION PREVENTION PAYS PROGRAM IN AN ATTEMPT TO MITIGATE ENVIRONMENTAL COSTS DURING ECONOMIC RECESSION. THE COMPANY'S PROGRAM WAS ABLE TO ELIMINATE 75,000 TONS OF AIR POLLUTION, 1325 TONS OF WATER POLLUTANTS, 500 MILLION GALLONS OF POLLUTED WASTEWATER AND 2900 TONS OF SLUDGE/YR; TOTAL SAVINGS FOR THE U.S. FACILITIES FROM THESE REDUCTIONS RESULTED IN A GAIN OF $17.4 MILLION IN THREE YRS. EFFORTS BY OTHER COMPANIES TO FOLLOW 3M'S EXAMPLE ARE DISCUSSED. HOWEVER, ECONOMIC INCENTIVES TO ENCOURAGE WASTE REDUCTION AND RECOVERY ARE STILL NEEDED. (1 DIAGRAM, 1 DRAWING, 10 REFERENCES, 1 TABLE)
[ENV]

0165036 83-003791
MAKING POLLUTION PREVENTION PAY,
MARY REYNOLDS BABCOCK FOUNDATION (PERGAMON) MAKING POLLUTION PAY SYM PROCEEDINGS, WINSTON-SALEM, NC, MAY 26-27, 82 (163)

SPECIAL REPORT THE PHILOSOPHICAL, TECHNOLOGICAL, AND ECONOMICAL ASPECTS OF POLLUTION PREVENTION ARE DISCUSSED. EVIDENCE IS PRESENTED FROM VARIOUS INDUSTRIES, INCLUDING 3M AND CIBA-GEIGY, TO ILLUSTRATE THE SHIFT FROM ''END OF PIPE'' CONTROL TO POLLUTION PREVENTION. CLEAN TECHNOLOGY IS HIGH-LEVEL TECHNOLOGY, IT LEADS TOWARD HIGH RESOURCE UTILIZATION EFFICIENCY AND LOW POLLUTION. THESE APPROACHES ARE APPLIED TO SEVERAL AREAS: POLYVINYL ALCOHOL RECOVERY, HAZARDOUS WASTES, CHEMICAL RECYCLING, WASTE MANAGEMENT, AND POTENTIALS FOR NORTH CAROLINA. PROPOSALS FOR POLLUTION PREVENTION PROGRAMS IN NORTH CAROLINA ARE REVIEWED. (NUMEROUS DIAGRAMS, GRAPHS, REFERENCES, TABLES)
[ENV]

0147473 *81-000521
AFTER IT HAS BEEN BURNED-THE PROBLEMS OF WASTE DISPOSAL AND RESOURCE RECOVERY,
BOEGLY, BILL ; WATSON JACK
ORNL ENV SCIENCES DIV,
ORNL REVIEW, WINTER 80, V13, N1, P71 (4)

SURVEY REPORT TECHNIQUES THAT ARE CURRENTLY USED IN DISPOSAL OF FLYASH AND BOTTOM ASH FROM COAL-FIRED POWER PLANTS ARE REVIEWED. THOUGH THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976 PROVIDES ECONOMIC INCENTIVES FOR RESOURCE RECOVERY FROM SOLID WASTE, DISPOSAL OF ASH IN LANDFILLS IS STILL THE MOST WIDELY USED DISPOSAL TECHNOLOGY IN THE COAL INDUSTRY. POTENTIAL USES OF ASH AND SLAG FROM COAL-FIRED PLANTS INCLUDE FILLER MATERIAL IN CONSTRUCTION AND IN ASPHALT PRODUCTION. EFFORTS THAT ARE AIMED AT IMPROVING RESOURCE RECOVERY ASPECTS OF SOLID WASTE DISPOSAL IN THE COAL INDUSTRY ARE SURVEYED. (1 DRAWING, 1 PHOTO)
[ENV]

I.HAZARDOUS WASTE

STATE PROGRAMS

Reduction of Hazardous Wastes: Innovative Opportunities for Industry and Government
Schecter, R.N.
Waste Minimization Conference Proceedings
February 19-20, 1987; Washington, D.C.
Government Institutes, Inc.

An overview paper describing governmental options to promote multi-media waste reduction which address economic incentives and example waste reduction techniques. The North Carolina Pollution Prevention Pays Program and programs of thirteen other states are discussed.
[NC]

0187501 *87-008418
RECYCLING,
PHOENIX QUARTERLY, SPRING 86, V18, N1, P6(7)

JOURNAL ARTICLE THE STATE OF VIRGINIA HAS TAKEN ITS FIRST STEP IN RECOGNIZING THE POTENTIAL DANGERS OF HAZARDOUS MATERIALS IN PRODUCTS THAT MUST BE DISPOSED OF OR RECYCLED. THE DEVELOPMENT OF HAZARDOUS WASTE DISPOSAL CAPACITY WITHIN THE STATE IS BEING ENCOURAGED WHILE THE USE OF HAZARDOUS SUBSTANCES IN MANUFACTURING IS TO BE DISCOURAGED. THE IMPACTS OF HAZARDOUS MATERIALS ON THE QUALITY OF RECYCLED PRODUCTS ARE DISCUSSED. DESIGNERS AND ENGINEERS CAN NO LONGER SELECT AND UTILIZE MATERIALS WITHOUT CONSIDERATION OF THEIR RECYCLABILITY AND HAZARDOUS WASTE POTENTIAL. ISSUES OF PESTICIDE WASTE DISPOSAL AND SCRAP EXPORTS AND USE IN THE U.S. ARE ALSO COVERED.
[ENV]

0181609 86-037259
STATE MOVES TO REGULATE WASTES TO HIT INDUSTRY WITH ADDED COSTS,
OIL & GAS J, JUN 24, 85, V83, N25, P25(5)

JOURNAL ARTICLE PACED BY CALIFORNIA, MANY STATE GOVERNMENTS ARE FOCUSING IN THE PETROLEUM INDUSTRY IN THEIR GROWING CONCERN ABOUT HAZARDOUS WASTES. STATE ACTION ON CONTROL OF TOXIC WASTES WILL HIT THE INDUSTRY WITH HIGHER OPERATING COSTS, MORE REGULATION, AND INCREASED TAXES. CALIFORNIA'S SUPERFUND CALLS FOR PETROLEUM/CHEMICAL TOXIC WASTE GENERATORS TO PAY ABOUT 40% WITH THE BALANCE SHARED AMONG OTHER WASTE GENERATING INDUSTRIES. HAZARDOUS WASTE LANDFILLING IS BEING ELIMINATED IN FAVOR OF RECYCLING AND INCINERATION. REGULATORY AND LEGISLATIVE ACTIONS ADDRESSING HAZARDOUS WASTES IN TEXAS, LOUISIANA AND THE ROCKY MOUNTAIN STATES ARE SUMMARIZED.
[ENV]

4
The Georgia Tech Hazardous Waste On-Site Consultation Program: Approach and Results
Nemeth, J.C.; Kamperman, K.L.
Georgia Institute of Technology, Georgia Tech
Research Institute, April 1985

Program background, approach, recommendations, and results of one year grant activities are discussed.
[MN]

26
Hazardous Materials in North Carolina: A Guide for Decisionmakers in Local Government
Andrews, Burby and Turner
North Carolina Pollution Prevention Pays Program, 1985

An overview of hazardous materials use, management and disposal is provided to help local officials in the decision making process. This includes information on hazardous waste generation and management, emergency response, and facility siting as it relates to local communities.

0182146 *86-040854
HAZARDOUS WASTE STRATEGY,
MICHIGAN DEPT NATURAL RESOURCES REPORT, MAY 17, 85 (54)

STATE/LOCAL GOVT REPORT POLICY GUIDELINES ARE PROPOSED TO ESTABLISH A HAZARDOUS WASTE MANAGEMENT SYSTEM IN MICHIGAN WHICH WILL PROVIDE MAXIMUM PROTECTION FOR PUBLIC HEALTH AND ENVIRONMENTAL QUALITY. THE STATE SHOULD PROMOTE THE USE OF ALTERNATIVES TO LAND DISPOSAL. WASTE REDUCTION, RECLAMATION, AND RECYCLING SHOULD BE ENCOURAGED. AN ASSISTANCE FIRST APPROACH TOWARD THE REGULATED COMMUNITY WOULD PROVIDE INFORMATION TO HELP BUSINESSES ACHIEVE COMPLIANCE WITH NEW REQUIREMENTS MANDATED BY THE 1984 AMENDMENTS TO THE RESOURCE CONSERVATION & RECOVERY ACT OF 1976. THE MICHIGAN DEPT. OF NATURAL RESOURCES SHOULD UPGRADE HAZARDOUS WASTE LANDFILL DESIGN REQUIREMENTS AS LANDFILL TECHNOLOGY IMPROVES.
[ENV]

1154660 PB85-234540/XAB
Hazardous Waste Management Plan: Recommendations of the Select Advisory Panel on Hazardous Wastes to the Water, Air and Waste Management Commission
Iowa Dept. of Water, Air and Waste Management, Des Moines.
Corp. Source Codes: 080392000
Feb 85 45p
See also PB85-234557.
Languages: English
NTIS Prices: PC A03/MF A01 Journal Announcement: GRAI8525
Country of Publication: United States

The plan presents the current status of generation, treatment and disposal of hazardous waste in Iowa and projects these activities into the future. It also provides recommendations for achieving sound, long-term management of hazardous waste in Iowa. The major conclusions and alternatives, presented by the plan, address changes in policy and waste management. Waste management guidelines were recognized. Land disposal of hazardous wastes is the least preferred option. Other alternatives are (1) waste reduction through industrial production changes, segregation of hazardous wastes from nonhazardous wastes, process modification, and end-product substitution; (2) reuse, recovery of material or energy, and recycling; and (3) incineration and treatment of wastes to reduce the volume of generated wastes or to reduce the hazard level of these wastes. Disposal and long-term storage, as a last alternative, must still be used for residues from the previously mentioned practices.
[NTIS]

0181197 *86-036165
FINAL REPORT OF THE INDIANA ENVIRONMENTAL POLICY COMMISSION,
INDIANA ENV POLICY COMMISSION REPORT, DEC 84 (88)

STATE/LOCAL GOVT REPORT RECOMMENDATIONS ARE COMPILED FOR IMPROVING THE ENVIRONMENTAL POLICIES AND MANAGEMENT PROGRAMS IMPLEMENTED IN INDIANA. A NEW STATE AGENCY FOR ENVIRONMENTAL PROGRAMS SHOULD BE ESTABLISHED. THE FUNDING OF PROGRAMS SHOULD BE SIGNIFICANTLY INCREASED FROM THAT REQUIRED AS A MINIMUM BY THE FEDERAL GOVERNMENT. ENVIRONMENTAL PRIORITIES INCLUDE SETTING FRAMEWORKS FOR GROUNDWATER PROTECTION, LANDFILL AND HAZARDOUS WASTE DISPOSAL REGULATION, ACID RAIN RESEARCH, AND PUBLIC PARTICIPATION.
[ENV]

4
Idea to Reality: Implementing a Statewide Pollution Prevention Program for North Carolina
Schecter, R.
North Carolina Pollution Prevention Pays Program, 1984

A 1984 conference paper outlining the North Carolina Pollution Prevention Program's origins, goals and functions.
[NC]

0180566 *85-030558
AN ECONOMIC ANALYSIS OF ILLINOIS' NEW HAZARDOUS WASTE LAW: P.A. 82-572,
CARLSON J. L. ; JOHNSON GARY V.; ULEN TOM S.
ILLINOIS STATE UNIV,
NATURAL RESOURCES J, OCT 84, V24, N4, P865(21)

JOURNAL ARTICLE THE ILLINOIS WASTE LAW OF 1982 SEVERELY RESTRICTS THE LANDFILL DISPOSAL OF HAZARDOUS WASTES. IMPLEMENTATION OF THE LAW DEPENDS ON INTERPRETATION OF THE EMBODIED CONCEPT OF ECONOMIC REASONABLENESS. THE STATE CAN GRANT SPECIFIC AUTHORIZATION FOR DISPOSAL OF SUCH WASTE ONLY AFTER THE GENERATOR HAS REASONABLY DEMONSTRATED THAT, CONSIDERING TECHNICAL FEASIBILITY AND ECONOMIC REASONABLENESS, THE WASTE STREAM CANNOT BE RECYCLED, INCINERATED, OR OTHERWISE TREATED. THIS STANDARD OF AFFORDABILITY DOES NOT ACHIEVE, FROM AN ECONOMIC EFFICIENT STANDPOINT, THE SOCIALLY OPTIMAL AMOUNT OF LANDFILLING HAZARDOUS WASTE. THE LAW SHOULD BE REWRITTEN TO COMPEL REGULATORS TO ESTABLISH STATEWIDE, RATHER THAN CASE-BY-CASE, STANDARDS. (60 PHOTOS,)
[ENV]

0175388 *85-001759
ECONOMIC AND REGULATORY INCENTIVES FOR HAZARDOUS WASTE REDUCTION IN MASSACHUSETTS,
FINKEL ADAM M.
HARVARD UNIV,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF, MA, OCT 13, 1983 P44(19)

CONF PAPER ENVIRONMENTAL OFFICIALS IN MASSACHUSETTS HAVE A PARTICULAR INTEREST IN PROMOTING HAZARDOUS WASTE REDUCTION, DUE TO PUBLIC RESOLVE TO OPPOSE NEW TREATMENT/DISPOSAL FACILITIES UNTIL GOVERNMENT AND INDUSTRY COOPERATE TO MINIMIZE EXCESS WASTE GENERATION. MANY FIRMS CAN REALIZE ECONOMIC ADVANTAGES FROM WASTE REDUCTION, BUT INFORMATIONAL AND FINANCIAL BARRIERS IMPEDE APPROPRIATE TECHNOLOGY ADOPTION. TWO PROMISING APPROACHES FOR STATE GOVERNMENT INTERVENTION IN THIS FIELD ARE PURSUED. A TAX CAN BE IMPOSED ON THE GENERATION OF ALL HAZARDOUS WASTES TO RAISE THE COST OF WASTE PRODUCTION AND PROVIDE REDUCTION INCENTIVES. INCENTIVE SCHEMES TO INDUCE ADOPTION OF BEST REDUCTION TECHNOLOGIES ARE ALSO COVERED. (15 REFERENCES,) [ENV]

181
Approach to technical assistance for industrial and hazardous waste generators
Hunt, G.; Sloan, W.M.; Walters, R.W.
Maryland Hazardous Waste Facilities Siting Board, September 1983

Investigators propose to define appropriate ingredients of a technical assistance program. Proposal includes a discussion on components of a technical assistance study, cost of the program, and observation of organizational roles.
[MN]

0175365 *85-001518
NEW YORK STATE INDUSTRIAL MATERIALS RECYCLING PROGRAM: THE SECOND YEAR,
SIMPSON PICKETT T.
NEW YORK STATE ENV FACILITIES CORP,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF,
MA, OCT 13, 83, P227(22)

CONF PAPER THE NEW YORK STATE ENVIRONMENTAL FACILITIES CORP. IS REQUIRED BY STATE LAW TO PROMOTE ACTIVITIES FOR REDUCING THE AMOUNT OF WASTE NEEDING OFFSITE DISPOSAL. THE PUBLIC BENEFIT CORPORATION ENCOURAGES THE EXCHANGE OF INDUSTRIAL WASTE MATERIALS FOR RECYCLING, AND PROVIDES INDUSTRIES WITH RELATED TECHNICAL INFORMATION AND ASSISTANCE. PASSIVE AND ACTIVE WASTE EXCHANGE EFFORTS ARE DETAILED, AS ARE INDUSTRIAL FINANCING AND TECHNOLOGY TRANSFER SCHEMES. (3 DIAGRAMS, 5 TABLES,)
[ENV]

0175192 *85-001327
THE OPPORTUNITY, CHALLENGE AND OBLIGATION OF MAKING POLLUTION PREVENTION PAY IN NORTH CAROLINA,
HUISINGH DONALD
NORTH CAROLINA STATE UNIV,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF,
MA, OCT 13, 83, P9(27)

CONF PAPER MANY FEDERAL AND STATE POLLUTION CONTROL LAWS HAVE BEEN ENACTED AND ENFORCEMENT MECHANISMS DEVELOPED TO REDUCE IMPACTS OF INDUSTRIAL AIR AND WATER EMISSIONS. THESE POLICIES EMPHASIZE POLLUTION CONTROL RATHER THAN POLLUTION PREVENTION, ALTHOUGH THE LATTER IS MORE ECONOMICALLY AND ENVIRONMENTALLY SOUND. EXAMPLES DRAWN FROM VARIOUS INDUSTRIAL OPERATIONS UNDERSCORE HOW IMPLEMENTATION OF POLLUTION PREVENTION IS A PREFERRED OPTION. A POLLUTION PREVENTION PAYS POLICY HAS BEEN IMPLEMENTED IN NORTH CAROLINA. ELEMENTS OF THE PROGRAM ARE DISCUSSED. (1 DIAGRAM, 15 REFERENCES,)
[ENV]

82-00683

Handbooks for Siting Hazardous Waste Management Facilities in New England

Clark, P.; Wondolleck, J.
Clarke-McGlennon Assoc. Boston, MA
ENVIRON. IMPACT ASSESS. REV VOL. 1, NO. 3, PP. 319-323, Publ.Yr: 1980
Languages: ENGLISH

Three hundred million gallons of hazardous waste are generated annually by 4,500 firms throughout New England. The critical question facing New England today is what to do with these wastes. In an attempt to address this question, the New England Regional Commission (NERCOM) began a hazardous waste management program in 1978. NERCOM, a federal-state partnership of the six New England state governors and a federal cochairman appointed by the president, serves to maintain and improve the region's economic well-being. Its hazardous waste management program is directed toward encouraging facility development, strong state regulations, prompt clean-up of illegal dumps, public education, and waste reduction and recycling. The facility development project has undergone two phases.
[POL]

81-00701

Resource recovery in California-an alternative to disposal of hazardous wastes.

Schwarzer, C. G.; Storm, D. L.
Aerojet Energy Conversion Co., Hazardous Materials Systems, CA
TOXIC SUBSTANCES JOURNAL 2(1), 51-66, Publ.Yr: Summer 1980
illus. refs.
No abs.
Languages: ENGLISH
Doc Type: JOURNAL PAPER

The California Department of Health Services, as mandated by the California Hazardous Waste Control Act of 1978, is currently developing a comprehensive resource recovery program using a combined clearing-house-consultation approach. Although land disposal is still considered, alternate methods for the disposal of highly dangerous materials and materials with an economic value were investigated. Initially as an information gathering effort, the pilot Resource Recovery Program begun in 1977 evolved into a program encouraging unrelated industries to develop symbiotic relationships. By Aug. 1978, 35 hazardous waste streams were being recycled, and sufficient data had been collected to categorize the hazardous wastes into 5 broad recycling groups. The success of the pilot program indicates that a government-industry cooperative effort can result in utilization of many hazardous wastes. (FT)
[POL]

I.HAZARDOUS WASTE

CASE STUDIES

Waste audit study of the printed circuit board manufacturing industry

Planning Research Corporation, San Jose, CA
Prepared for California Department of Health Services, Alternative Technology Section, 714/744 P Street, Sacramento, CA, June 1987

This report presents the results of PRC's waste audit study for the printed circuit (PC) board manufacturing industry. The study was conducted to identify opportunities for waste reduction available to the PC board manufacturing industry and to develop a generic audit protocol that can be used by manufacturers to assess their own waste reduction opportunities. The study emphasized technologies available to small- and medium-sized PC board facilities. The tasks included in the study were: (1) selecting PC board manufacturing facilities to include in the study, (2) performing waste audits at each facility, (3) developing recommendations for implementing waste reduction technologies at each audited facility, (4) discussing with facility representatives the feasibility of implementing the waste reduction recommendations, and (5) developing this waste audit report.
[CA]

Waste audit study on automotive repairs

Toy, W.M.
Prepared for California Department of Health Services, Alternative Technology Section, 714/744 P Street, Sacramento, CA, May 1987

This waste audit study investigates and analyzes the automotive repair industry in California. It makes specific recommendations for the reduction of hazardous waste generated by this industry (SIC 7538 and 7539). The study performs an onsite evaluation of three firms to characterize the typical operations conducted. The firms audited are: (1) a medium-sized auto transmission business, (2) a large automotive dealership in Northern California, and (3) a large leasing and maintenance company for automotive parts cleaning equipment. The current waste management practices are assessed. Specific onsite and offsite waste treatment recycling alternatives are developed. The results are generalized to allow other firms in the industry to perform a self-audit. This report will help these firms to develop economical, commercially available waste management options.
[CA]

Hazardous waste minimization audit studies on the paint manufacturing industry

Jacobs Engineering Group, Inc.
Prepared for California Department of Health Services, Alternative Technology Section, 714/744 P Street, Sacramento, CA 95814, April 1987

Waste audit studies were conducted at three paint manufacturing plants in the Los Angeles area. The audited plants were selected based on their willingness to participate, applicability to study objectives, and potential usefulness of data derived from the audit to the industry as a whole. The results of the first two audits were utilized to prepare a general self-administered waste audit checklist. This checklist was sent to the third plant for testing of its effectiveness as a self-audit tool. The checklist is broken down into the following categories: facility characterization, raw material handling, material substitution and product formulation, process operation, plant operations management, and waste management. The checklist was developed as a tool for the industry to systematically evaluate their current processes and operation for additional waste minimization potential.
[CA]

Waste audit study of automotive paint shops

SCS Engineers, Inc.
Prepared for California Department of Health Services, Alternative Technology Section, 714/744 P Street, Sacramento, CA 95814, January 1987

This report presents the results of SCS's waste audit study of automotive paint shops. The focus of the study is on the types and quantities of wastes generated, treatment and disposal alternatives, and the potential for reducing the amount and/or toxicity of waste generated. Several tasks were performed for this study, including: (1) field audits of six automotive paint shops in Southern California; (2) review of current waste management methods and technologies; (3) characterization of source reduction alternatives for minimizing solvent waste; (4) characterization of onsite and offsite solvent recycling alternatives; and (5) characterization of treatment alternatives.
[CA]

Accomplishments of North Carolina Industries: Case Summaries
Hunt, G.; Schecter, R; and Adkins, D.
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina 59pp January 1987

Case summaries documenting multi-media waste reduction techniques and economic savings of 55 industries are presented. Fifteen Standard Industrial Classification (SIC) categories are covered.
[NC]

Pollution Prevention Challenge Grants: Project Summaries
Hunt, G.; Schecter, R. and Adkins, D.
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina   60pp October 1987

Summaries of the results of more than thirty matching grant projects on waste reduction are presented. Projects address reduction and recycling techniques applied to water quality, hazardous waste, and solid waste involving industries, trade associations and local government.
[NC]

0185528   *86-065864
LOCAL GOVERNMENT PROGRAMS AID NATION'S NEW SQHWGS,
JOHNSON BRUCE ; VOELL PAULA T.
WORLD WASTES, MAR 86, V29, N3, P12(5)

JOURNAL ARTICLE THE TACOMA-PIERCE COUNTY, WA, HEALTH DEPT. INITIATED A MODEL PROGRAM DESIGNED TO DRASTICALLY REDUCE ILLEGAL DISPOSAL OF SMALL QUANTITIES OF HAZARDOUS WASTE. INSTEAD OF CRACKING DOWN ON BUSINESSES GENERATING SMALL WASTE QUANTITIES, THE AGENCY OFFERS TO HELP ILLEGAL AS WELL AS LEGAL GENERATORS PROPERLY DISPOSE OF THEIR WASTES, WITHOUT REPORTING VIOLATORS TO ENVIRONMENTAL REGULATORY AUTHORITIES. ALMOST IMMEDIATELY, THERE WAS A 40% REDUCTION IN THE NUMBER OF BUSINESSES HAVING PROBLEMS IN DISPOSING HAZARDOUS WASTES. ASSISTANCE IS ALSO OFFERED TO SMALL HAZARDOUS WASTE GENERATORS BY THE ERIE COUNTY, NY, DEPT. OF ENV. & PLANNING. INFORMATION ON WASTE REDUCTION, DISPOSAL, AND RECYCLING TECHNIQUES IS PROVIDED, AND ADVICE IS OFFERED IN INTERPRETING AND COMPLYING WITH PERTINENT FEDERAL STATUTES.
[ENV]

196
Casebook: filtration system reduces chemical usage/waste disposal in paint spray booths
Boynton, M.
POLLUTION ENGINEERING, pp. 10,64, February 1986

A photomechanical equipment company obtained a cost-slashing solution for their paint sludge disposal problem from their spray booth operations involving centrifuged solids-from-liquid separator/filtration.
[MN]

0185509 86-065676
CUTTING CHEMICAL WASTES: WHAT 29 ORGANIC CHEMICAL PLANTS ARE DOING TO REDUCE HAZARDOUS WASTES,
SAROKIN DAVID J. ; MUIR WARREN R. ; MILLER CATHERINE G. ; SPERBER SEBASTIAN R.
INFORM REPORT, 1986 (535)

ASSN REPORT A SURVEY HIGHLIGHTS HOW 29 ORGANIC CHEMICAL PLANTS IN NEW JERSEY, OHIO, AND CALIFORNIA ARE REDUCING HAZARDOUS WASTE GENERATION AT THE SOURCE. DETAILED PROFILES OF THE PLANTS FEATURE CHEMICALS USED AND DISCHARGED, METHODS OF WASTE DISPOSAL USED, WASTE REDUCTION PRACTICES ADOPTED, AND COSTS INCURRED. THE REGULATORY, ECONOMIC, AND OTHER FACTORS THAT HAVE ENCOURAGED OR DISCOURAGED HAZARDOUS WASTE REDUCTION IN THIS INDUSTRY ARE EXAMINED.
[ENV]

0185408 *86-064929
NEW ENGLAND CONGRESSIONAL INSTITUTE HAZARDOUS WASTE MANAGEMENT PROJECT FIRST PHASE REPORT,
NEW ENGLAND CONGRESSIONAL INST REPORT, UNDATED (13)

ASSN REPORT IN NEW ENGLAND, THE WIDESPREAD USE OF INDUSTRIAL SOLVENTS AND VARIED ELECTROPLATING OPERATIONS GENERATE A DOMINANT PROPORTION OF THE HAZARDOUS WASTE PRODUCED IN THE REGION. THE QUANTITIES AND TYPES OF HAZARDOUS WASTES GENERATED IN THE REGION ARE EXAMINED. ABOUT 42% OF NEW ENGLAND'S HAZARDOUS WASTE IN 1983 WAS TREATED OR DISPOSED OF ON THE PROPERTIES OF THE COMPANIES THAT GENERATED IT. THERE IS APPARENTLY SUFFICIENT AQUEOUS WASTE TREATMENT AND SOLVENT RECOVERY CAPACITY AVAILABLE. NEW WASTE REDUCTION, DECONTAMINATION, AND PRETREATMENT TECHNOLOGIES MUST BE ADOPTED AS MANY LANDFILLS AND SURFACE IMPOUNDMENTS HAVE CEASED OPERATION.
[ENV]

254
Copper, nickel, and chromium recovery in a job shop
Nadeau, T.; Dejak, M.
PLATING AND SURFACE FINISHING, pp. 48-54, April 1986

An overview and the use of economics of short-bed ion exchange treatment for metal recovery as implemented by a job shop in Canada is given.
[MN]

10
Waste Reduction in the Furniture Industry
Kohl
North Carolina Pollution Prevention Pays Program, 1986

A handbook containing information on waste reduction techniques which can be used by furniture manufacturers. Case studies are used to document the types of techniques which can be used to reduce waste generation and their associated costs and payback periods.
[NC]

Waste Reduction Study for Seven Industries in Tennessee
EMPE, Inc.
Department of Natural Resources and Community Development
Nashville, Tennessee 1986

Hazardous waste reduction studies were conducted on the following seven industries: printers and publishers, automobile body repair and paint shops, metal cutting and machine shops, dry cleaners, electroplaters, paper products manufacturers, and furniture fabricators.

3
A Handbook of Environmental Auditing Practices and Perspectives in North Carolina
Smith
North Carolina Pollution Prevention Pays Program, 1985

Summaries are included of technical and economic aspects of pollution prevention programs instituted by both North Carolina companies and communities. The cases are organized by industrial categories and are cross-indexed by waste streams and reduction techniques.
[NC]

85
Hazardous waste reduction programs: three companies describe their efforts
Anon.
THE HAZARDOUS WASTE CONSULTANT, pp.1-10, January 1985,
and pp. 1-12, February 1985

Articles summarize how three major chemical companies conduct their waste reduction programs.
[MN]

1156823 PB85-242097/XAB
Small Generator Demonstration Project
(Final rept)
Tacoma-Pierce County Health Dept., WA.
Corp. Source Codes: 084109000
Sponsor: Environmental Protection Agency, Seattle, WA. Region X.
Report No.: EPA/910/9-85/124
Feb 85 45p
Languages: English
NTIS Prices: PC A03/MF A01 Journal Announcement: GRAI8526
Country of Publication: United States
Contract No.: EPA-S-811262

The Small Generator Demonstration Project is an experimental effort to decrease the amount of hazardous waste being mishandled and improperly disposed by small businesses in the South Tacoma area of Tacoma, WA. This one year project is centered around a program of education stressing voluntary compliance to increase recycling and decrease improper waste disposal. The project is designed to make the alternative waste handling practices presented to the business community easy, inexpensive, and permanent by identifying available disposal resources such as local recyclers. 116 small businesses ranging from the automotive to the wood products industry were visited and notified of safe methods of handling and disposing of their hazardous wastes. This information resulted in 40% of the businesses with waste handling problems changing to proper waste disposal.
[NTIS]

1146927 AD-A157 319/5/XAB
Industrial Processes to Reduce Generation of Hazardous Waste at DoD Facilities. Phase I Report. Evaluation of 40 Case Studies
(Final rept. Aug 84-Feb 85)
Higgins, T. E.
CH2M Hill, Inc., Gainesville, FL.
Corp. Source Codes: 079872000; 412623
Report No.: WDR-93/02
15 Feb 85 121p
Languages: English
NTIS Prices: PC A06/MF A01 Journal Announcement: GRAI8523
Country of Publication: United States
Contract No.: DACA87-84-C-0076

Many studies of DoD facilities have recommended industrial process modifications that would reduce wastes generated at the source, rather than concentrating efforts on end-of-pipe treatment facilities. Some of these studies, which included many featuring excellent cost/benefit raios, have been successfully implemented; some, however, have not. Therefore, the methods, such as incentives, and management practices used to successfully implement a given modification, are important factors in the evaluations of the case studies examined in this report. Contents: Paint Stripping; Painting; Metal Plating; Recycle of Solvents & Other Organic Fluids; Explosives Manufacturing; Jet Engine Test Cell; Fire Fighting Training; Fuel Tank Cleaning; Purchase and Use Specifications. [NTIS]

86-03636
Considerations of state-owned management of hazardous wastes
Martin, J.E.
Sch. Public Health, Univ. Michigan, Ann Arbor, MI 48109-2029, USA
HAZARDOUS WASTE HAZARDOUS MATER VOL. 2, NO. 3, pp. 399-410,
Publ.Yr: 1985
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

The public interest requires assurance that optimal management exist for hazardous waste from current activities, small quantity generation, and site cleanup actions. The Michigan Toxic Substance Control Commission examined private, semi-private, and state systems in terms of short- and long-term public health and environmental protection, and concluded that a state-chartered Hazardous Waste Authority should be considered to emphasize recycling/treatment/destruction as alternatives to land disposal.
[POL]

86-08469
Industrial processes to reduce generation of hazardous waste at DoD facilities. Phase III report. Summary of projects of excellence workshops
Higgins, T.E.; Higgins, B.P.J.
CH2M/Hill, Reston, VA, USA
Publ.Yr: 1985
NTIS, SPRINGFIELD, VA (USA)
SUMMARY LANGUAGE - ENGLISH; AD-A165 085/2/GAR.
Languages: ENGLISH

This report is the third for this waste reduction project. It summarizes the results of the project, presents reviews of the workshops, and provides a source of materials prepared for the workshops in the appendices. This report concentrates on the three cases selected as Projects of Excellence: Plastic Media Paint Stripping at Hill Air Force Base, Ogden, Utah; Innovative Hard Chrome Plating at Pensacola Naval Air Rework Facility Pensacola, Florida; and Centralized Vehicle Washracks and Scheduled Maintenance Facilities at Fort Lewis Army Post, Tacoma, Washington.
[POL]

87-00813
Industrial processes to reduce generation of hazardous waste at DoD facilities. Phase 3 report. Appendix B. Workshop manual innovative hard chrome plating, Pensacola Naval Air Rework Facility, Pensacola, Florida
Higgins, T.E.; Higgins, B.P.J.
CH2M/Hill, Reston, VA, USA
Publ.Yr: 1985
NTIS, SPRINGFIELD, VA (USA)
SUMMARY LANGUAGE - ENGLISH; AD-A165 087/8/GAR.
Languages: ENGLISH

This appendix is the WORKSHOP MANUAL for the waste reduction project pertaining to Innovative Hard Chrome Plating at Pensacola Naval Air Rework Facility, Pensacola, Florida.
[POL]

8
There's no gold in this wastewater
Gould, J.
POLLUTION ENGINEERING, VOL. 16, NO. 7, pp. 10-11, July 1984

This paper discusses a new and successful treatment facility in Florida, which recovers precious metals from waste acid.
[MN]

86-06996

Cost-effective waste management for metal finishing facilities: Selected case studies

Hunt, G.E.; Walters, R.W.
Radian Corp., Research Triangle Park, NC 27709, USA
39. Purdue Industrial Waste Conference West Lafayette, IN (USA) 8-10 May 1984
PROCEEDINGS OF THE 39th INDUSTRIAL WASTE CONFERENCE, MAY 8,9,10, 1984; PURDUE UNIVERSITY, WEST LAFAYETTE, INDIANA pp. 521-528, Publ.Yr: 1985
BUTTERWORTH PUBLISHERS, STONEHAM, MA (USA)
Languages: ENGLISH

Under current Federal regulations the metal finishing industry must control the wastewater and hazardous wastes they generate. This can be accomplished through the use of cost-effective waste management techniques. These range from simple water conservation techniques to more advanced material recovery systems. All of these methods are based on readily available technologies, which are simple and inexpensive to install, operate, and maintain. A systematic application of these methods can result in a significant reduction in the cost of wastewater treatment and hazardous waste disposal. Yet, these techniques are not widely used within the metal finishing industry. This paper presents some of the results of two studies into the application of these techniques to metal finishing facilities within Maryland. This work was sponsored by the Maryland Hazardous Waste Facilities Siting Board. The Board recognized that many of the waste generators within the State did not have the technical capabilities to develop cost-effective waste management strategies. Thus, the Board investigated means by which industry could be provided with assistance on hazardous waste management.
[POL]

103

Corporate strategy and actions for reducing hazardous waste disposal requirements

Grotelueschen, R.D.
Presented at Pollution to Profit: Reducing Hazardous Waste in Illinois, April 1984

Methods by which Deere and Company of Illinois has reduced its hazardous waste disposal activities are discussed.
[MN]

168
Recovery pays off for Chicago job shop plater
Robinson, G.T.
PRODUCTS FINISHING, VOL. 47, NO. 9, pp. 44-48, June 1983

Ion transfer recovery of chromium and reverse osmosis for nickel recovery pay dividends while avoiding water pollution problems.
[MN]

177
Recovery of waste organic solvents in a health care institution
Gibbs, L.M.
AMERICAN CLINICAL PRODUCTS REVIEW,
VOL. 2, NO. 6, pp. 37-43, November-December 1983

Potential for resource conservation and recovery of chemical and radioactive wastes is discussed; reduction of waste liquid scintillation of fluids and purification of HPLC solvents has been demonstrated.
[MN]

0175461 *85-001834
PROCESS MODIFICATIONS: CASE HISTORIES IN SOURCE REDUCTION,
CAPACCIO ROBERT S.
MABBETT CAPACCIO & ASSOC, MA,
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF,
MA, OCT 13, 83, P154(16)

CONF PAPER PROCESS MODIFICATIONS IMPLEMENTED AT ELECTROPLATING AND PRINTED CIRCUIT BOARD MANUFACTURING PLANTS IN NEW ENGLAND HAVE RESULTED IN DECREASED WASTE GENERATION AT THE PROCESS SOURCE. CASE STUDIES DEMONSTRATE THE BENEFITS OF ANALYZING INDUSTRIAL PROCESSES FOR IDENTIFICATION OF OPPORTUNITIES FOR CHEMICAL CONSERVATION AND RINSEWATER FLOW MINIMIZATION. CHEMICAL SUBSTITUTION OPTIONS THAT EITHER MINIMIZE A WASTE CONCERN OR ELIMINATE WASTE STREAMS VIA RECYCLE ARE DISCUSSED. (6 REFERENCES, 9 TABLES,)
[ENV]

82
Pilot system for reclamation of heavy metals from electroplating processes
Reinhard, F.
Recycling International, Karl J. Thome-Kozmiensky, ed., 1982

A pilot testing of the RMA system (purification of metal-containing wastewater) developed and patented by Dornier System is discussed.
[MN]

112
Stop plating recovery? Not with electrochemical recovery
Horelick, P.D.
PLATING AND SURFACE FINISHING, pp. 40-45, August 1982

A job shop in Maryland takes advantage of electromechanical pollution control to expand its market share of cadmium plating.
[MN]

76
Chrome Recycling
Sharp, B.W.
JOURNAL OF AMERICAN LEATHER CHEMISTS ASSOCIATION,
VOL. 76, pp. 24-34, 1981

A chrome recycling program at Gehardt-Vogel Tanning Company is discussed.
[MN]

81-02453
Cleaning up America.
Anonymous.
Waste Age 11(10), 57-59, Coden: WAGEAE Publ.Yr: Oct 1980
illus. no refs.
No abs.
Languages: ENGLISH
Doc Type: JOURNAL PAPER
TREATMENT CODES: C (CASE STUDY)

Fondessy Enterprises, of Oregon, Ohio, still carries on trash collection and landfill operations, but it also provides emergency cleanup of oil and chemical spills, tank cleaning, transportation of toxic and hazardous wastes, sludge disposal, and resource recovery, plus a brokerage service for recyclable chemical wastes and heavy equipment rentals. The 4 companies that comprise the Fondessy group own >300 pieces of equipment, including 14 solid waste collection vehicles, landfill equipment, 40 cranes of 8-200 T capacity, tractors and semitrailers, end loaders and bulldozers, an oil mop, boats and barges, skimmers, and light planes. Although hazardous waste handling gives the company national recognition, business fluctuates widely depending upon movement of chemicals. Solid waste is the low-key portion of the operation, but it provides the daily cash flow that the other operations do not. In the event of a storage tank rupture or spill from a rail car or tank truck, men and equipment can be mobilized in as little as 15 min. The firm has a telephone link with an EPA data base in Washington, DC, to obtain characteristics of the material and safety precautions to observe when handling it. (FT)
[POL]

80-04763

Hazardous wastes get the treatment for reuse.

Young, R. A.
Pollution Engineering, 1301 S. Grove Ave., Barrington, IL 60010
POLLUTION ENGINEERING 11(6), 54-56, Coden: PLENEW Publ.Yr: Jun 1979
illus. no refs.
No abs.
Languages: ENGLISH
Doc Type: JOURNAL PAPER

SCA Chemical Services Company, a division of SCA Chemical Waste Services, Incorporated, has built a waste-to-waste processing and recovery facility in Newark, New Jersey, which offers a new chemical service, and solves the problems of how to handle toxic and hazardous wastes in full compliance with local, state, and federal regulations. The plant is the first of a new breed of processing and recovery facilities to use proprietary multitrain unit processes and resource recovery and reutilization technology. Products generated by the facility fall into 3 categories: recovered, marketable, or reusable organics, acids, alkalies, and fuels; chemically detoxified and treated inactive aqueous process effluent; and dewatered sludges and concentrated solid residues. A permitted tank farm is located onsite for storage of the recovered products; but due to the high marketability of the recovered products, onsite storage is minimal. Incoming waste streams are classified according to 5 major functional groups based on processing operations, i.e., organically contaminated aqueous waste, acid recovery, fuel reclamation and formulation, acid-base redox neutralization, and fuel reclamation and formulation. Organic reclamation is conducted in 4-stage unit-operations. Associated reactors, scrubbers, receivers, and a distillation unit steam strip solvents, and separate and treat aqueous phases. Process reactions include liquid-liquid separations, liquid-solid separations, steam stripping of solvents and volatile organics, acid-base neutralization (pH adjustment), and chemical and active-oxygen oxidation. The organic reclamation process, acid recovery process, fuel reclamation and formulation, acid-base neutralization process, and hazardous waste detoxification process are diagrammed. (FT)
[POL]

80-00566

Novel approach to hazardous waste disposal in New England.

Pojasek, R. B.
Energy Resources Co. Inc., 185 Alewife Brook Pkwy., Cambridge, MA 02138
New England Water Pollution Control Association fall meeting Fall 1978
NEW ENGLAND WATER POLLUTION CONTROL ASSOCIATION. JOURNAL 13(1), 36-46, Coden: JNEWA6 Publ.Yr: Apr 1979
illus. refs.
ISSN: 0548-4502
No abs.
Languages: ENGLISH
Doc Type: JOURNAL PAPER
TREATMENT CODES: D (DESCRIPTIVE) ; G (GENERAL OR REVIEW)

Technically desirable waste treatment alternatives for the management of industrial wastes are energy and/or materials recovery, detoxification treatment, and volume reduction prior to disposal. Regardless of which alternative is used, residues must be disposed of in an environmentally suitable manner. Attractive options include incineration, secured landfills, land cultivation and composting, and solidification. Although the prevailing sentiment in New England leans in the direction of a combination of landfill and incineration, the use of solidification in conjunction with these 2 is a novel approach for waste disposal. In practice, wastes from various processes are deliberately mixed with one another to provide a certain level of pretreatment and stabilization. Thus, the blending of an acidic waste with a caustic one provides neutralization, while the addition of a sulfide-containing waste to a heavy metal waste would provide some measure of metal immobilization. Because stabilization-solidification can convert a hazardous waste into a nonhazardous ore-like substance, there are a number of productive uses for the final product, i.e., the use of pozzalanic-based solidified wastes as roadbed aggregates and in parking lots. Solidification has enjoyed extensive use in Japan for land reclamation along harbor fronts, and in Europe in abandoned mines and quarries. In New England, it would appear that solidification offers some advantages over the present option of transporting wastes to secured landfills in western New York; however, solidification would require regulatory acceptance and approval. (FT) [POL]

INTERNATIONAL ASPECTS

0181106 *86-033842
MANAGING WASTE: THE DUTY OF CARE,
UK ROYAL COMMISSION ON ENV POLLUTION REPORT 11, DEC 85 (222)
FED GOVT REPORT THE 11TH REPORT OF THE U.K. ROYAL COMMISSION ON ENV.

POLLUTION CONCERNS WASTE MANAGEMENT. SUCH WASTE INCLUDES COMMERCIAL, CONTROLLED, HOUSEHOLD, INDUSTRIAL, AND HAZARDOUS VARIETIES. TOPICS DISCUSSED INCLUDE: WASTE CONTROLS, CHARACTERISTICS, AND QUANTITIES; WASTE STRATEGY; WASTE STREAM REDUCTION; GIVING WASTE VALUE; COLLECTION, STORAGE, AND TRANSPORT OF WASTES; ULTIMATE DISPOSAL ROUTES; WASTE MANAGEMENT AND PRACTICE; WASTE MANAGEMENT PLANNING AND ADMINISTRATION; PROFESSIONALISM (DESIGN, STANDARDS, AND TRAINING); R&D; CONCLUSIONS AND RECOMMENDTIONS; AND APPENDICES. (NUMEROUS PHOTOS, REFERENCES, TABLES)
[ENV]

0181658 *86-038499
THE MISSING LINKS: RESTRUCTURING HAZARDOUS-WASTE CONTROLS IN AMERICA,
PIASECKI BRUCE ; GRAVANDER JERRY
(CORNELL UNIV) AND ; (CLARKSON UNIV),
TECHNOLOGY REVIEW, OCT 85, V88, N7, P43(11)

JOURNAL ARTICLE DESPITE INCREASING REPORTS OF LEAKING LANDFILLS AND NEWS OF TOXIC POISONING AND GROUNDWATER CONTAMINATION, LAND DISPOSAL REMAINS THE DOMINANT METHOD OF MANAGING TOXIC WASTE IN THE U.S. ALTERNATIVES TO LAND DISPOSAL ARE AVAILABLE, PARTICULARLY IN EUROPEAN STRATEGIES THAT FAVOR WASTE RECYCLING AND TREATMENT. SUCH POLICIES IMPLEMENTED IN EUROPE ARE BASED ON A KNACK FOR COOPERATIVE FINANCING AND MANAGING LIABILITIES JOINTLY BETWEEN REGIONAL GOVERNMENTS AND PRIVATE INDUSTRIES. THESE AND OTHER FACTORS CLASH WITH SOME LONGSTANDING U.S. POLITICAL BIASES WHICH HINDER THE ACCEPTANCE OF ALTERNATIVE HAZARDOUS WASTE MANAGEMENT SCHEMES. GUIDELINES FOR ADAPTING THE EUROPEAN STRATEGY TO U.S. NEEDS ARE HIGHLIGHTED.
[ENV]

0185723 *86-068272

HAZARDOUS WASTE MANAGEMENT IN MANITOBA,

MANITOBA ENV & WORKPLACE SAFETY & HEALTH REPORT, JUL 85 (55)

NON US GOVT REPORT ABOUT 20,325 TPY OF HAZARDOUS WASTES ARE PRODUCED BY AT LEAST 293 COMPANIES IN MANITOBA, CANADA. QUANTITIES OF WASTE GENERATED BY CLASSIFICATION ARE REPORTED. PRESENT LANDFILL SITES AND EXISTING SEWERAGE FACILITIES ARE SURVEYED IN ORDER TO ASSESS THE CURRENT STATE OF HAZARDOUS WASTE MANAGEMENT IN THE PROVINCE. TECHNOLOGIES AVAILABLE FOR THE TREATMENT AND DISPOSAL OF THESE RESIDUES ARE RECOMMENDED FOR IMPLEMENTATION, INCLUDING WASTE UTILIZATION AND RECYCLING, PHYSICAL TREATMENT, CHEMICAL TREATMENT, AND INCINERATION. FIVE OPTIONS FOR ESTABLISHING A MANAGEMENT SYSTEM IN THE PROVINCE ARE SUGGESTED.

[ENV]

0185720 *86-068269

REMOVAL AND DESTRUCTION OF PCB FROM CONTAMINATED SOILS AND ASSOCIATED MATERIALS,

CANADIAN ELECTRICAL ASSN REPORT 195-D-365, JUN 85 (120)

ASSN REPORT PCB-CONTAMINATED SOILS COLLECTED FROM SITES OF CAPACITOR RUPTURE OR TRANSFORMER LEAKAGE MUST BE STORED UNTIL A GOVERNMENT-APPROVED PCB DESTRUCTION FACILITY IS AVAILABLE. SOLVENT EXTRACTION WAS EXAMINED AS A METHOD OF REMOVING PCB FROM CONTAMINATED SOILS TO REDUCE THE VOLUME OF PCB-POLLUTED WASTES. AN ALIPHATIC SOLVENT, INSULATING OIL, AND TROCHLOROETHANE READILY EXTRACTED PCB FROM CONTAMINATED SAND, GRAVEL, CLAY, OR TOPSOIL IN A ROTATING DRUM EXTRACTOR. THE PCB LEVEL OF THE SOIL WAS REDUCED TO LESS THAN 10 MG/KG. PILOT-SCALE TESTS INDICATED THAT SOLVENT EXTRACTION OF PCB FROM SOIL WAS PRACTICAL ON A LARGE SCALE IF FOLLOWED BY DISTILLATION TO RECOVER THE SOLVENT FOR REUSE AND TO CONCENTRATE PCB IN THE STILL RESIDUE.

[ENV]

0180562 *85-029414

STRATEGY TO PROMOTE HAZARDOUS WASTE MANAGEMENT,

ENV CANADA/NOVA SCOTIA DEPT OF ENV REPORT, UNDATED (126)

A FRAMEWORK FOR A HAZARDOUS WASTE MANAGEMENT STRATEGY FOR IMPLEMENTATION IN NOVA SCOTIA, CANADA, IS PRESENTED. THE SCHEME FOCUSES PRIMARILY ON REDUCING THE QUANTITIES OF WASTE PRODUCED THROUGH RECYCLING, REUSE, AND RECOVERY, AND SECONDARILY ON SAFE TREATMENT AND DISPOSAL. A PUBLIC INFORMATION AND EDUCATION PROGRAM IS PROPOSED, AS IS A PUBLIC PARTICIPATION STRATEGY.

[ENV]

0181085 *86-032885
HAZARDOUS WASTES: THE NEED FOR A MORE PREVENTIVE, COMPREHENSIVE EUROPEAN WASTE MANAGEMENT POLICY,
KLATTE ERNST R.
EUROPEAN ENV BUREAU (BRUSSELS) SOIL PROTECTION EUROPEAN COMMUNITIES SEMINAR, NOV 12-14, 84, P223(20)

CONF PAPER ABOUT 20-30 MILLION TPY OF TOXIC AND HAZARDOUS WASTES ARE PRODUCED IN THE EEC. FACILITIES FOR THE SAFE DISPOSAL AND TREATMENT OF SUCH WASTES ARE CONSIDERED INADEQUATE. EEC LEGISLATION AND DIRECTIVES HAVE BEEN ENACTED TO REMEDY THIS SITUATION. MANAGEMENT AND DISPOSAL POLICIES REGULATING WASTE OIL, PCBS, AND HAZARDOUS SOLID WASTES ARE OUTLINED. IMPROVED POLICIES MUST EMPHASIZE WASTE REDUCTION AT THE SOURCE AND THE STRICT POLICING OF THE TRANSPORT OF DANGEROUS PRODUCTS. (40 REFERENCES,)
[ENV]

0181636 *86-037305
LOW PRESSURE MEMBRANES: CONCENTRATION AND TREATMENT OF HAZARDOUS WASTES,
BHATTACHARYYA D. ; SILER J. L.
UNIV OF KENTUCKY,
CHEMCONTROL A/S 2ND OPERATING EUROPEAN HAZWASTE MGT INTL SYM, ODENSE, DENMARK, SEP 11-14, 84 (32)

CONF PAPER LOW PRESSURE REVERSE OSMOSIS MEMBRANES CAN BE USED FOR THE REMOVAL AND CONCENTRATION OF HAZARDOUS CONSTITUENTS FROM SELECTED INDUSTRIAL WASTES. LOW PRESSURE OPERATION MARKEDLY REDUCES CAPITAL COSTS AND ENERGY CONSUMPTION. RESULTS OF AN EXPERIMENT INVOLVING THE SIMULTANEOUS REMOVAL OF ORGANICS AND INORGANICS FROM AN OIL SHALE RETORT PROCESS WASTEWATER ARE REPORTED. APPLICATION OF THE PROCESS TO PHENOLIC WASTES, ORGANIC ACID WASTES, AND PESTICIDE WASTES IS ALSO CONSIDERED.
[ENV]

0181626 *86-037280
PHYSICO-CHEMICAL PROCESSING OPTIONS,
SUND CHRISTINA
I. KRUGER A/S, DENMARK,
CHEMCONTROL A/S 2ND OPERATING EUROPEAN HAZWASTE MGT INTL SYM, ODENSE, DENMARK, SEP 11-14, 84 (18)

CONF PAPER THE PHYSICOCHEMICAL TREATMENT OF INORGANIC HAZARDOUS WASTES AT THE CENTRALIZED WASTE TREATMENT FACILITY IN DENMARK IS HIGHLIGHTED. CHARACTERISTICS OF ALKALINE, ACIDIC CHROMIUM-LADEN, ACIDIC IRON-LADEN, AND MISCELLANEOUS WASTES ARE SUMMARIZED. CYANIDE WASTES ARE DETOXIFIED BY ALKALINE CHLORINATION; CHROMIUM AND OTHER METAL CONCENTRATIONS ARE REDUCED BY IRON OR CARBONATE PRECIPITATION. FLUORIDE PRECIPITATION, MERCURY RECOVERY, REVERSE OSMOSIS, AND ELECTROLYTIC METHODS ARE EXAMINED.
[ENV]

0181622 *86-037274
RECOVERY OF SOLVENTS,
MULLER KLAUS
DANISH ENV PROTECTION AGENCY,
CHEMCONTROL A/S 2ND OPERATING EUROPEAN HAZWASTE MGT INTL SYM, ODENSE, DENMARK, SEP 11-14, 84 (18)

CONF PAPER THE RECYCLING OF INDUSTRIAL SOLVENTS HAS IMPORTANT IMPLICATIONS FOR ENERGY CONSERVATION, ENVIRONMENTAL PROTECTION, AND HAZARDOUS WASTE REDUCTION. ON-SITE INDUSTRIAL RECOVERY OPERATIONS ARE IDENTIFIED AS MECHANICAL SEPARATION, EXTRACTION, EVAPORATION, DISTILLATION, DRYING, CONDENSATION, ABSORPTION, AND ADSORPTION. OFF-SITE SOLVENT RECOVERY CONSIDERATIONS ARE ALSO SURVEYED. [ENV]

0172873 *84-004782
HAZARDOUS WASTE MANAGEMENT IN EUROPE,
BUEKENS, A. ; WILLCOX J.
FREE UNIV OF BRUSSELS, BELGIUM
PACIFIC CHEMICAL ENGINEERING 3RD CONF, SEOUL, MAY 8-11, 83, V4, P331 (7)

CONF PAPER GENERAL PROVISIONS OF HAZARDOUS WASTE MANAGEMENT LEGISLATION IMPLEMENTED IN WESTERN EUROPE ARE SUMMARIZED. HAZARDOUS WASTE DEFINITIONS AND STANDARDS VARY FROM NATION TO NATION, HIGHLIGHTING THE NEED FOR UNIFORM TERMINOLOGY AND CRITERIA. MANAGEMENT AND TREATMENT OPTIONS ARE DISCUSSED; THESE INCLUDE WASTE MINIMIZATION, WASTE REDUCTION, AND THE USE OF WASTE EXCHANGES. INCINERATION AND PHYSICOCHEMICAL TREATMENT SYSTEMS, LAND DISPOSAL, AND SEA DISPOSAL ACTIVITIES ARE REVIEWED. (1 MAP, 6 REFERENCES, 2 TABLES)
[ENV]

102
Compendium on low- and non-waste technology
Vol. IV
Anon.
Economic Commission for Europe, United Nations, 1983

Summaries of Monographs 63-80 are presented.
[MN]

220
Waste abatement, reuse, recycle, and reduction opportunities in industry
Anon.
Waterloo Industrial Waste Management Program, Environment Canada, Toronto, Ontario, 1983-1985

The following approaches in dealing with waste management are covered (in descending order of desirability): waste abatement, waste reduction, waste reuse, and waste treatment (waste disposal is not covered).
[MN]

101
Compendium on low- and non-waste technology
Vol. III
Anon.
Economic Commission for Europe, United Nations, 1982

Summaries of Monographs 47-62 are presented.
[MN]

99
Compendium on low- and non-waste technology
Vols. I and II
Anon.
Economic commission for Europe, United Nations, 1981

Summaries of Monographs 1-20 and 21-46 are presented.
[MN]

88
Recovery of metal from industrial sludge and recovery of solvents
Baker, L.E.
ENVIRONMENTAL POLLUTION MANAGEMENT, pp. 76-81, May-June 1980

The progressive and expanding recovery industry in the United Kingdom is discussed.
[MN]

Managing and Recycling Waste Oils
Kohl, J; Currier, J.
North Carolina State University
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina 122pp March 1987

The manual was developed from a workshop series which addressed regulation, management, and recycling of used oils. Hydraulic, metalworking, and cutting oils are included.
[NC]

1087068 PB84-235928
California Used Oil Recycling Program
Moskat, G. W.
California State Solid Waste Management Board, Sacramento.
Corp. Source Codes: 071180000
Jul 84 5p
Included in Measurements and Standards for Recycled Oil-4, p7-11 1984.
Languages: English
NTIS Prices: (Order as PB84-235902, PC A14/MF A01)
Journal Announcement: GRAI8425
Country of Publication: United States

Used oil in California is classified as a hazardous waste material subject to the regulatory overview of many agencies. Because of its classification as such, used oil is regulated by the State Department of Health Services (DOHS), and subject to manifesting and vehicle registration requirements; the Air Resources Board (ARB), who regulates emission levels and hydrocarbon emissions from processing plants and fuel oil burners; the Regional Water Quality Control Boards who monitor oil disposal operations; the California Highway Patrol, who performs vehicle inspections of the hauling industry; and the State Solid Waste Management Board (SWMB), who regulates used oil recycling activities in the state. This report will focus upon the latter area of used oil recycling, and the program California has developed to effectively monitor the disposition of over 50.6 million gallons of used oil collected and recycled each year in the state. In addition, the author will discuss the efforts the state has made to promote the concept of oil recycling through public awareness and marketing activities.
[NTIS]

0151456 *86-037341
RE-REFINING OF WASTE OIL,
MULLER KLAUS
DANISH ENV PROTECTION AGENCY,
CHEMCONTROL A/S 2ND OPERATING EUROPEAN HAZWASTE MGT INTL SYM, ODENSE, DENMARK, SEP 11-14, 84 (17)

CONF PAPER RATHER THAN INCINERATING THEM, WASTE OILS CAN BE ECONOMICALLY RECYCLED BY RE-REFINING THEM. PROCESS TECHNOLOGIES COMMONLY EMPLOYED IN THE RE-REFINING OF INDUSTRIAL AND LUBRICATING OILS ARE EXPLAINED. ACID-CLAY, SOLVENT-BASED, AND VACUUM DISTILLATION TECHNIQUES ARE COVERED. REQUIREMENTS FOR ESTABLISHING A WASTE OIL RECYCLING SYSTEM ARE DISCUSSED IN TERMS OF COLLECTION, TREATMENT, AND MARKET CONDITIONS.
[EGY]

0998926 PB83-235812
Used Lube Oil: Hazardous Waste Versus Valuable Resource
(Final rept.)
Becker, Donald A.
National Bureau of Standards, Washington, DC.
Corp. Source Codes: 004692000
1983 6p
Pub. in Proceedings of the Annuaonference Trace Substances in Environtal Health (16th) Columbia, Missouri, p22-27 May 31-June 3 1982.
Languages: English Document Type: Journal article
NTIS Prices: Not available NTIS Journal Announcement: GRAI8321
Country of Publication: United States

Large amounts of used lubricating oil are generated in the United States each year. This oil is very widely dispersed throughout the country, especially by the 60 percent of motorists who change their own motor oil. Under current EPA regulations, the characteristics of most used oil would place it in the hazardous waste classification. This paper describes research on impurities and contaminants in used and recycled oil, including PCBs, lead and lead species, and the halogens chlorine and bromine. Additional data on the enviromental consequences of improper used oil disposal is needed, in order to help provide proper direction for the oil recycling industry and the appropriate regulatory agencies.
[NTIS]

1017315 PB84-103761

Household Hazardous Waste Disposal Project. Metro Toxicant Program Report Number 1C. Public Opinions and Actions

(Final rept. 1981-82)
Galvin, D. V. ; Guss, L. ; Leraas, J. L.
Municipality of Metropolitan Seattle-METRO, WA. Water Quality Div.
Corp. Source Codes: 070006001
Sponsor: Environmental Protection Agency, Seattle, WA. Region X.
Report No.: MMS/WQR-8213
Aug 82 130p
See also PB84-103753 and PB84-103779.
Also available in set of 4 reports PC E99, PB84-103738.
Languages: English
NTIS Prices: PC A07/MF A01 Journal Announcement: GRAI8401
Country of Publication: United States
Contract No.: EPA-P-000233-01

As part of Metro's Household Hazardous Waste Disposal Project, a pilot study was conducted in the Seattle area to determine public awareness of and attitudes about the issues of toxic/hazardous substances in the home and their safe disposal. Metro also wished to determine actual response to a collection program in a brief, neighborhood test. An initial telephone survey was conducted in the Seattle metropolitan area and the test neighborhood. A three-week collection project for pesticides, solvents, and used motor oil was run in the 4000 household neighborhood in February, 1982, followed by a telephone survey to help interpret project results. This report describes the preparation, procedures, and findings of the surveys and pilot study. Recommendations have been developed for a regional education and collection system for household hazardous wastes in the Seattle/King County area.
[NTIS]

0181621 *86-037272

RE-REFINING OF WASTE OIL,

MULLER KLAUS
DANISH ENV PROTECTION AGENCY,
CHEMCONTROL A/S 2ND OPERATING EUROPEAN HAZWASTE MGT INTL SYM, ODENSE, DENMARK, SEP 11-14, 84 (17)

CONF PAPER RATHER THAN INCINERATING THEM, WASTE OILS CAN BE ECONOMICALLY RECYCLED BY RE-REFINING THEM. PROCESS TECHNOLOGIES COMMONLY EMPLOYED IN THE RE-REFINING OF INDUSTRIAL AND LUBRICATING OILS ARE EXPLAINED. ACID-CLAY, SOLVENT-BASED, AND VACUUM DISTILLATION TECHNIQUES ARE COVERED. REQUIREMENTS FOR ESTABLISHING A WASTE OIL RECYCLING SYSTEM ARE DISCUSSED IN TERMS OF COLLECTION, TREATMENT, AND MARKET CONDITIONS.
[ENV]

MATERIALS RECOVERY

87-02293
Materials recycling and waste processing
Anon.
WASTE AGE VOL. 17, NO. 2, p. 88, Publ.Yr: 1986
Languages: ENGLISH

Land disposal is the final step in the solid waste management process. The need for landfills can be reduced somewhat through reuse, recycling, and/or resource recovery of waste materials. Processing solid wastes can reduce handling problems, increase the density of the wastes, and decrease the environmental problems associated with waste disposal. This lesson describes recycling and processing of solid wastes for resource recovery.
[POL]

87-02356
There's gold in that there ash
Mahoney, P.F.
Energy Answers Corp., Albany, NY, USA
WASTE AGE VOL. 17, NO. 4, p. 265, Publ.Yr: 1986
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Ash residue may be overlooked as a potential income-producing product when a waste-burning plant is built. Recent technological advances have enabled the ash residue to be economically processed into marketable products. In one process now used at three plants, for every 75 cubic yards of shredded solid waste, which would have to be processed at the front end to separate and recover the metals, only one cubic yard of ash needs to be processed for recovery. This is equivalent to enriching our "urban ore" by more than 50 times! It also changes the raw material's physical characteristics into a homogeneous, easily processible product. Furthermore, in this process, the metals are not contaminated with organic materials.
[POL]

86-08364
Energetics of compost production and utilization
Diaz, L.F.; Golueke, C.G.; Savage, G.M.
Cal Recovery Systems, Inc., Richmond, CA, USA
BioCycle 16: Annual National Conference on Composting and Waste Recycling
Baltimore, MD (USA) 30 Apr - 2 May 1986
BIOCYCLE VOL. 27, NO. 8, pp. 49-54, Publ.Yr: 1986
Languages: ENGLISH

How to assess energy consumption in a municipal solid waste composting operation. Of the economic factors, the energetics of composting in waste management is in urgent need of further elaboration and exploration. This need prompted an attempt on the part of the authors of this paper to resolve basic questions regarding the energetics involved in the production and utilization of compost from urban solid wastes and municipal sludges, and peripherally, the applicability of these findings to the management of other wastes (e.g., agricultural). Progress made in pursuing this attempt is described in the present paper.
[POL]

0155542 *87-009638
SQUEEZING DOLLARS OUT OF SALVAGE,
ELECTRICAL WORLD, NOV 86, V200, N11, P83(4)

JOURNAL ARTICLE A DECADE AGO, GULF STATES UTILITIES MANAGERS USED TO PAY A TRUCK TO COME IN AND HAUL AWAY ITS JUNK, SUCH AS FLYASH AND USED PLANT EQUIPMENT. NOW THE UTILITY SELLS THIS JUNK AS PART OF INVESTMENT RECOVERY PLANS. THE INVESTMENT RECOVERY PROGRAM HAS EVOLVED INTO A MODERN, EFFICIENT OPERATION DEDICATED TO OBTAINING THE BEST PRICE FOR ALL RECOVERABLE BYPRODUCTS OF ELECTRICITY GENERATION. OPERATIONS INCLUDE THE BALING AND SELLING OF SCRAP COPPER FROM CONDUTORS, REUSING TRANSFORMERS, AND SELLING AND USING FLYASH AS A PARTIAL REPLACEMENT FOR CEMENT AND FOR CHEMICAL FIXATION OF LIQUID WASTES.
[EGY]

0187990 *87-012346
ALUMINIUM RECOVERY FROM CONSUMER WASTE-I. TECHNOLOGY REVIEW,
BUTTERWICK L. ; SMITH G. D.
OXFORD UNIV, UK,
CONSERVATION & RECYCLING, 1986, V9, N3, P281(12)

JOURNAL ARTICLE THE TECHNOLOGY WHICH HAS BEEN DEVELOPED FOR THE RECOVERY AND REPROCESSING OF ALUMINUM SCRAP IS REVIEWED. METHODOLOGIES FOR SEPARATING AND RECOVERING THE AL-RICH FRACTION FROM MIXED MUNICIPAL WASTE ARE DESCRIBED; THESE INCLUDE THE RAYTHEON EDDY-CURRENT AND REYNOLDS FRICTION-GRAVITY PROCESSES. PRETREATMENT, MELTING, AND REFINING, THE THREE MAIN STAGES OF AL SCRAP REPROCESSING, ARE ALSO DELINEATED. THE ENERGY SAVINGS OBTAINABLE FROM THE USE OF RECYCLED AL ARE ESTIMATED.
[ENV]

0186963 87-003918
TIN CANS: HISTORY AND OUTLOOK, PART II,
APOTHEKER STEVE ; MARKSTAHLER ELIZABETH
CHAMPAIGN COMMUNITY RECYCLING CENTER, IL,
RESOURCE RECYCLING, MAR-APR 86, V5, N1, P24(7)

JOURNAL ARTICLE THE PRESENCE OF THE TIN CAN, WHICH USES 90% OF THE TINPLATE PRODUCED, HAS DECLINED BY ALMOST 50% IN THE PAST DECADE. RECYCLING OF SN CANS HAS NOT ENJOYED MUCH SUCCESS AS PART OF SOURCE SEPARATION PROGRAMS. A CURSORY SURVEY OF PROGRAMS AROUND THE U.S. SHOWS THAT DROP-OFF PROGRAMS RECOVER 1-2 LB OF SN CANS PER CAPITA WHILE CURBSIDE PROGRAMS ARE MORE SUCCESSFUL WITH A RANGE OF 2.5-8.0 LB/PER CAPITA. APPARENTLY THERE IS LITTLE MOTIVATION TO RECYCLE THESE CONTAINERS, AND COMPARED WITH ALUMINUM THERE IS LITTLE FINANCIAL INCENTIVE. MELTING AND DETINNING PROCESSES FOR RECYCLING TINPLATE ARE DISCUSSED. ALTHOUGH FUTURE USE OF THE SN CAN SEEMS ASSURED IN THE U.S., INDUSTRY EFFORTS MUST BE DIRECTED TOWARDS THE PROMOTION OF RECYCLING TECHNOLOGY.
[ENV]

0184639 *86-060254
NEW DIRECTIONS IN SOLID WASTE AND RECYCLING,
HERTZBERG RICHARD
BIOCYCLE, JAN 86, V27, N1, P22(6)

JOURNAL ARTICLE WITH LANDFILLS BECOMING FEWER IN NUMBER AND MORE EXPENSIVE TO OPERATE, RECYCLING LOOKS MORE AND MORE ATTRACTIVE TO MUNICIPALITIES BOTH ECONOMICALLY AND POLITICALLY. EFFORTS ARE DIRECTED TOWARD THE FORMULATION OF A MATERIALS RECOVERY SYSTEM AS A CONSCIOUS ACT OF PUBLIC POLICY, COMBINING THE RECYCLING ACTIVITIES OF PRIVATE COMPANIES AND GOVERNMENT AGENCIES. THE PURPOSE OF DESIGNING SUCH A SYSTEM IS TO BUILD A RECYCLING COLLECTION AND PROCESSING INFRASTRUCTURE THAT SERVES ALL SECTORS AND CAN LINK WITH THE EXISTING RECYCLING INDUSTRY MATERIALS FLOW. RECYCLING PROGRAMS UNDERWAY IN PHILADELPHIA, PA; SAN FRANCISCO, CA; AND NEW YORK CITY ARE EXAMINED.
[ENV]

0184855 *86-060757
REVERSE VENDING MACHINE UPDATE,
RYPINS STEVE ; PAPKE CHARLES
RESOURCE MANAGEMENT ASSOC, CA,
RESOURCE RECYCLING, JAN-FEB 86, V4, N6, P20(7)

JOURNAL ARTICLE PLACED OUTDOORS IN SUPERMARKET PARKING LOTS OR INDOORS IN THE LOBBY OF GROCERY MARKETS, REVERSE VENDING MACHINES EXCHANGE ALUMINUM CANS FOR CASH, COUPONS, OR REDEEMABLE RECEIPTS. THE PLACEMENT OF REVERSE VENDERS IN OR NEAR SUPERMARKETS HAS MADE RECYCLING MORE VISIBLE AND MORE CONVENIENT. OVER 2500 SUCH MACHINES IN THE FIELD RECOVERED ABOUT 12-36 MILLION LB OF AL CANS IN 1985. IN THE NINE STATES WITH CONTAINER DEPOSIT LAWS, RETAIL STORES ARE ALREADY THE FOCAL POINT OF BEVERAGE CONTAINER REDEMPTION. RECENT TECHNOLOGY ADVANCES IN BOTH INDOOR AND OUTDOOR REVERSE VENDING MACHINES ARE SURVEYED.
[ENV]

0185414 *86-064935
TRENDS IN RECOVERY AND UTILIZATION OF WASTE PAPER IN RECYCLING MILLS, AND OTHER USERS OF WASTE PAPER, 1970-2000,
FRANKLIN WILLIAM E.
FRANKLIN ASSOC LTD, KS,
TAPPI J, FEB 86, V69, N2, P28(4)

JOURNAL ARTICLE THE INCREASE IN EXPORTS OF WASTE PAPER AND THE INCREASE IN RECYCLING INTO VIRGIN FIBER GRADES HAS HAD AN IMPACT ON TRADITIONAL RECYCLING MILLS. AS A RESULT, THERE ARE REALLY THREE RECYCLING INDUSTRIES IN OPERATION: RECYCLING MILLS, VIRGIN FIBER USERS OF WASTE PAPER, AND EXPORTS. OF THESE, THE RECYCLING MILLS ARE THE LEAST ABLE TO COMPETE FOR QUALITY FIBER. EVENTUALLY, THEY WILL CONTINUE TO BECOME LESS IMPORTANT IN COMPARISON WITH THE OTHER TWO USERS. RECYCLED PAPERBOARD WAS 60.6% OF TOTAL WASTE PAPER USE IN THE PAPER INDUSTRY IN 1970 AND WILL DECLINE TO 38% OF THE TOTAL BY THE YEAR 2000.
[ENV]

0183107 *86-045832

BARRIERS TO MATERIAL RECYCLING AT MUNICIPAL SOLID WASTE DISPOSAL FACILITIES,

LIEBERMAN CALVIN
INST SCRAP IRON & STEEL,
SCRAP AGE, OCT 85, V42, N10, P51(6)

JOURNAL ARTICLE THE CONCEPT OF RECYCLING OF MATERIALS IS AN APPROACH TO MEET THE CRISIS OF DISAPPEARING LANDFILLS. SEVERAL BARRIERS MUST BE OVERCOME IN ORDER TO REALIZE A SUCCESSFUL MUNICIPAL WASTE RECYCLING PROGRAM. THE FIRST BARRIER TO BE CONSIDERED IS THE MARKETPLACE. MATERIAL QUALITY, CONTAMINANTS, AND SUPPLY AND DEMAND CAN PREVENT THE MARKET ABSORPTION OF MATERIALS RECOVERED FROM THE MUNICIPAL SOLID WASTE STREAM. THE PRESENCE OF SMALL AMOUNTS OF HAZARDOUS MATERIALS AND TRAMP ELEMENTS ALSO IMPEDE RECYCLING.
[ENV]

0183805 *86-050924

A RENAISSANCE IN RECYCLING,

BASTA NICHOLAS
HIGH TECHNOLOGY, OCT 85, V5, N10, P32(6)

JOURNAL ARTICLE RESOURCE RECOVERY IS NOW BEING CONSIDERED FOR NEARLY ALL MANUFACTURING PROCESSES, AND IN MANY OF THEM IT HAS ALREADY BECOME STANDARD PRACTICE. NEW PLASMA TECHNOLOGY, POLYMERIC MEMBRANES, AND ELECTROCHEMICAL REACTIONS CAN CULL VALUABLE METAL COMPOUNDS FROM SLAGS, WASTEWATERS, OR FACTORY DUSTS. OTHER PROCESSES EMPLOY NOVEL BIOTECHNOLOGICAL METHODS TO EXTRACT COSTLY METALS FROM WASTE STREAMS. SEVERAL TECHNIQUES ARE ALSO UNDER DEVELOPMENT TO ENHANCE THE RECYCLING OF PLASTICS. GAS PRODUCTION FROM LANDFILLS AND USE OF MUNICIPAL SOLID WASTE AS AN ENERGY SOURCE REPRESENT OTHER AVENUES OF RESOURCE RECOVERY AND RECYCLING.
[ENV]

0144437 84-021462

ENERGY CONSERVATION AND RECYCLING IN THE PAPER INDUSTRY ,

GUNN, TIMOTHY L. ; HANNON BRUCE
UNIV OF ILLINOIS
RESOURCES & ENERGY, SEP 83, V5, N3, P243 (18)

THE AMOUNT OF WASTE PAPER THAT SHOULD BE RECYCLED BY THE PAPER INDUSTRY TO MINIMIZE THE TOTAL ENERGY USED IN THE U.S. IS DETERMINED. THE ECONOMIC CONSEQUENCES OF SUCH RECYCLING ARE ADDRESSED. A LINEAR PROGRAM TO APPROXIMATE ENERGY FLOWS, ENERGY COSTS, AND RECYCLING COSTS WAS EMPLOYED IN THE ANALYSIS. SUBSTANTIAL INCREASES IN PAPER RECYCLING ARE JUSTIFIED ON THE BASIS OF INCREASED COSTS OF ENERGY SINCE 1974. FUTURE INCREASES IN RECYCLING ARE ALSO JUSTIFIED ON THE BASIS OF HISTORICALLY VOLATILE SCRAP PRICES AND CYCLIC PAPER DEMAND. (1 DIAGRAM, 4 GRAPHS, 17 REFERENCES, 4 TABLES)
[EGY]

0142662 *83-024722
PUTTING POWERPLANT WASTES TO WORK ,
MAKANSI JASON
POWER, JUL 83, V127, N7, P23 (8)

GREAT POTENTIAL EXISTS TO RECOVER AND RECYCLE SOLID WASTES PRODUCED IN COAL-FIRED POWER PLANTS. SHORT-TERM BENEFITS ARE REDUCED COSTS FOR RAW MATERIALS AND FUEL. CURRENT POWER PLANT WASTE UTILIZATION PROJECTS ARE SURVEYED, AND THE TECHNICAL AND ECONOMIC STATUS OF EACH IS DISCUSSED. USES OF FLYASH AND BOTTOM ASH INCLUDE PRODUCTION OF CEMENT AND CONCRETE. CARBON DIOXIDE RECOVERED FROM STACKS CAN BE UTILIZED IN ENHANCED OIL RECOVERY. UPGRADING OF FLUE GAS DESULFURIZATION WASTES TO GENERATE REUSABLE SLUDGES AND GYPSUM IS ALSO CONSIDERED. MUNICIPAL REFUSE, SCRAP TIRES, AND METHANE RECOVERED FROM LANDFILLS ARE BEING USED AS PRIMARY FUELS. (6 DIAGRAMS, 3 PHOTOS, 11 REFERENCES, 4 TABLES)
[EGY]

0158073 *82-003853
CENTRALIZED RECYCLING OF HOUSEHOLD WASTE, DOES IT PAY?,
FAGERHAUG B.
KVAERNER BRUG A/S, OSLO,
PRESENTED AT ASSN OF FINNISH WASTE CONTRACTORS HELSINKI WASTE CONF,
HELSINKI, SEP 10, 81, P243 (12)

TECHNICAL REPORT COMMERCIAL SCALE CONVERSION OF HOUSEHOLD REFUSE INTO USEFUL PRODUCTS AND ENERGY IS EXAMINED. RECOVERED PRODUCTS WOULD INCLUDE PAPER, PLASTICS, FERROUS MATERIAL, AND ENERGY. ESTIMATES OF PRODUCTION AMOUNTS AND COSTS AND SALES INCOME INDICATE THAT CENTRALIZED RECYCLING WOULD PROVE PROFITABLE AND THAT ENERGY WOULD BE SAVED. (1 DIAGRAM, 4 TABLES)
[ENV]

81
Discarded tires: a potential source of hydrocarbons to displace petroleum
Wolsky, A.M.; Gaines, L.L.
RESOURCES AND ENERGY, VOL. 3, pp. 195-206, 1981

Unrecycled discarded tires are a serious solid waste problem that could provide a source of hydrocarbons for fuel, feedstocks, and material. Production of pyrolysis products or road pavement from tires is an economic alternative.
[MN]

335980 DA

HIGHWAY BINDER MATERIALS FROM CELLULOSIC AND RELATED WASTES

Butte, WA; Kohn, EM; Scheibel, EG
Suntech, Incorporated P.O. Box 1135 Marcus Hook Pennsylvania 19061; Federal Highway Administration Office of Research and Development, 400 7th Street, SW Washington D.C. 20590
Dec 1980 Final Rpt. 165p
AVAILABLE FROM: National Technical Information Service 5285 Port Royal Road Springfield Virginia 22161
SUBFILE: HRIS
CONTRACT NO: DOT-FH-11-9131; Contract
REPORT NO: FHWA-RD-80- 31

The abundance or cellulosic-based wastes was reviewed by section of the country and type which includes: wood wastes, municipal wastes and manures. Of the most promising waste conversion processes now under consideration, pyrolysis, liquification, and hydrolysis were selected for preliminary laboratory screening. Model wastes for this study included several pyrolysis oils, paper, sawdust and dried cow manure. Distillate oils produced during wood waste pyrolysis (WPO) served best as precursers of products that approxomated bitumens and highly viscous fluids. In the statistically designed study of process parameters which followed, the best conditions were identified for distilling and hydrogenating the crude WPO for conversion to a usable product (hydrogenate). This hydrogenate, because of its high oxygen content, could be added to conventional asphalt only in amounts up to ca. 15 weight percent concentration with little or no observed property change. In combination with sulfur, the ternary system-AC/hydrogenate/S:29/29/42 had a penetration value comparable to that of AC/S:65/35. A 909 metric ton/day waste processing facility could be cost effective in producing 72.7 metric tons per day of pyrolysis product equivalent to 318 metric tons or more of blended binder. This assumes that waste is available at no cost and that coproduct oil and char are credited at equivalent heating values. (FHWA)

319346 DA

CONCRETE RECYCLING

Halm, HJ (American Concrete Paving Association)
Transportation Research Board
Transportation Research News N89 1980 pp 6-10 2 Phot.
AVAILABLE FROM: Transportation Research Board Publications Office 2101
Constitution Avenue, NW Washington D.C. 20418
SUBFILE: HRIS

One of the more interesting new concepts that is gaining interest throughout the country is that of recycling old concrete pavements for aggregate in new construction. Recycling is consistent with the American Concrete Pavement Association (ACPA) econocrete concept, which encourages the use of recycled concrete for subbases, composite pavements, and full-depth pavements. The Federal Highway Administration has endorsed this program and at the present time has a national evaluation program on the recycling of old concrete pavements. Research by the U.S. Army Corps of Engineers indicates that the recycling of an old concrete pavement can actually enhance or improve the original aggregate, thus providing longer life than was possibly attained in the initial pavement. The depletion of supplies of high-grade concrete aggregates in certain regions, the need for better methods of solid-waste disposal, and energy conservation efforts have led to this accelerating interest in recycled concrete. Recycling of old concrete is feasible and should be considered whenever good aggregates are not available locally or when aggregate costs are excessive or where the costs of removing and wasting the old pavement are in excess of what the cost would be for recycling that material for new aggregate. In 1970, aggregates produced in the United States totaled 1.8 billion tons. The highway industry used 47 percent of this, or approximately 800 million tons. It is estimated that, by 1985, production of aggregates will reach 4 billion tons/year and that highways will use 50 percent or 2 billion tons/year. Of the various materials used in highway construction, aggregates constitute one of the major elements of cost-between 21 and 30 percent of the cost of all materials and supplies and between 10 and 14 percent of the total construction cost (excluding the cost of right-of-way and engineering). Recycled concrete can be used as an aggregate base or subbase for pavement, or these bases can be cement treated with soil-cement techniques. It can be used in econocrete subbases (lean concrete) by using concrete mixing plants and slipform pavers. Recycled concrete can also be used as aggregates in new concrete pavement if tests of new concrete made with crushed-concrete aggregate indicate acceptable strength and durability. (Author)
[TRIS]

327056 DA
SOLID WASTE RECLAMATION AND RECYCLING: TIRES. 1964-JULY, 1980 (CITATIONS FROM THE NTIS DATA BASE)
Hundemann, AS
National Technical Information Service, Springfield, VA.
Aug 1980 42p
AVAILABLE FROM: National Technical Information Service 5285 Port Royal Road Springfield Virginia 22161
SUBFILE: NTIS
PB80-814593

Methods of processing scrap tires, such as shredding, shearing, radiation treatment, retreading, hydrogenation, extraction, and emulsifying are cited. Incentives for recycling are examined and markets for recycled products are discussed. The use of recycled tires in highways, embankments, construction materials, and other products is covered. (This updated bibliography contains 37 citations, 2 of which are new entries to the previous edition.)
[TRIS]

ENERGY RECOVERY

87-02225
Process for converting solid waste and sewage sludge into energy sources and separate recyclable by products
Gangi, A.J.
Publ.Yr: 1986
U.S. CL. 241-17; Int. Cl. B02C 11/08, 21/00, 23/08.
Languages: ENGLISH

This patent is for a method of processing waste into a chemical intermediate substrate for production of energy sources and non-energy related by products.
[POL]

86-08393
Mass burning of MSW with energy recovery
Beckman, A.H.; Dragovich, M.G.
Katy-Seghers, Inc., 3844 Walsh St., St. Louis, MO 63116, USA
J. ENVIRON. ENG VOL. 112, NO. 3, pp. 564-571, Publ.Yr: 1986
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

There are four or five options for the final disposition of municipal waste, each with its own drawbacks and limitations. One system has been proven by 25 yrs or more of successful operation in Europe and some record of success in the U.S. This is mass burning of unsorted waste in a refractory or water wall furnace with a heat recovery boiler. Heat recovery is a misnomer as actually these systems should be referred to as municipal waste fired boilers or mass burning systems. Municipal waste-mass burning systems are appropriate for waste quantity from about 200 tons/day to about 3,000 and is a logical alternative to landfilling as the final disposition of municipal solid waste. Mass burning has the advantages of 90% volume reduction to a completely odorless inert product, potential for recovery of valuable heat energy and existing technology to remove dust and pollutants from the flue gas to meet the most severe environmental requirements.
[POL]

86-08320

From scrap heap to power plant

Anon.
ENVIRON. MANAGE. NEWS VOL. 1, NO. 5, pp. 11-12, Publ.Yr: 1986
Languages: ENGLISH

According to a recent report from the Investor Responsibility Research Center (IRRC), 450,000 tons of municipal solid waste are discarded daily, most of which is deposited in landfills. But only 5 percent of that amount is now burned in approximately 350 energy-producing incinerators worlwide. The IRRC report estimates that if all of America's annual 160 million tons of waste were burned, the resulting electricity would equal that produced by approximately 15 nuclear or 30 coal plants.
[POL]

0155113 *87-005070

RESOURCE RECOVERY,

CAROLAN MICHAEL J. ; PHILLIPS W. JOHN ; SHIMELL PAMELA B. ; JOHNSON BRUCE
GSF ENERGY INC, CA,
WORLD WASTES, JUN 86, V29, N6, P24(6)

JOURNAL ARTICLE FALLING ENERGY PRICES, ENVIRONMENTAL CONCERNS, AND FEWER GOVERNMENT INCENTIVES HAVE TAKEN THEIR TOLL ON THE INFANT LANDFILL GAS RECOVERY INDUSTRY. THIS SECTOR IS FEELING MORE AND MORE PRESSURE TO BE COMPETITIVE WITH ALTERNATIVE FUELS IN THE FACE OF RISING OPERATING EXPENSES. OTHER RESOURCE RECOVERY PROJECTS ARE BEING VIEWED AS PRIME BUSINESS VENTURES BY ENTREPRENEURS. THE VARIOUS ROLES PLAYED BY LOCAL DEVELOPERS IN DEMONSTRATING THE ECONOMIC FEASIBILITY OF WASTE-TO-ENERGY AND WASTE REPROCESSING SCHEMES ARE OUTLINED. OPTIONS BEING CONSIDERED FOR SOLID WASTE ENERGY CONVERSION AND RECYCLING IN THE U.K. AND SWEDEN ARE SUMMARIZED. TWO LARGE PILOT PROGRAMS, ONE INVOLVING SEMI-AUTOMATED REFUSE COLLECTION AND THE OTHER INVOLVING DOOR-TO-DOOR COLLECTION OF HAZARDOUS HOUSEHOLD WASTES, ARE PLENNED FOR IMPLEMENTATION IN LOS ANGELES, CA.
[EGY]

0155112 *87-005069

WASTE-TO-ENERGY: ANALYZING THE MARKET,

BUCHHOLZ JOHN D.
WORLD WASTES, JUN 86, V29, N6, P10(6)

JOURNAL ARTICLE THE PROGRESS OF COMPANIES IN THE WASTE-TO-ENERGY FIELD HAS BEEN TRACKED, AND THE NUMBER OF SUCH FACILITIES IN THE U.S. EITHER IN USE OR IN PLANNING STAGES IS IN THE 209-269 RANGE. THE TOP SIX COMPANIES PROCESS MORE THAN 50% OF THE SPLIT WASTE IN THE WASTE-TO-ENERGY FIELD BY PROJECT MANAGERS. SIGNAL ENV. SYSTEMS IS THE INDUSTRY LEADER AS PROJECT MANAGER WITH A SUBSTANTIAL MARGIN OF 22% OF THE MARKET, OR 17 FACILITIES IN THE OPERATING OR CONSTRUCTION STAGES. TABULATED DATA DEPICT SPECIFICATIONS FOR RESOURCE RECOVERY PLANTS IN THE U.S., AND PROVIDE SUMMARIES BY PROJECT MANAGERS AND OPERATORS, AND FOR ENGINEERS AND BOILER MANUFACTURERS.
[EGY]

87-02346

One view of RDF options

Smith, M.L.
Combust. Eng., Inc.
WASTE AGE VOL. 17, NO. 4, p. 120+, Publ.Yr: 1986
Languages: ENGLISH

Preparing municipal solid waste for burning through a variety or processes produces refuse-derived fuel. But the types or preparation of their end-products vary widely. Here's one view of the RDF experience options.
[POL]

0150868 *85-031590

SOLID-PHASE METHANE FERMENTATION OF SOLID WASTES,

GHOSH S.
IGT,
J ENERGY RESOURCES TECHNOLOGY-ASME TRANS, SEP 85, V107, N3, P402(4)
RESEARCH ARTICLE

A SOLID-PHASE METHANE FERMENTATION PROCESS WAS DEVELOPED FOR THE BIOLOGICAL GASIFICATION OF MUNICIPAL SOLID WASTES. THE PROCESS INVOLVES ACIDIC BIOLEACHATE PRODUCTION FROM AN ORGANIC BED AND BIOMETHANATION OF THE BED-LIQUEFACTION PRODUCTS IN AN EXTERNAL METHANE DIGESTER. EXPERIMENTAL OPERATION WITH MUNICIPAL WASTE SHOWED THAT ABOUT 81% OF THE BIODEGRADABLE VOLATILE SOLIDS COULD BE STABILIZED DURING THREE MONTHS OF BATCH OPERATION TO AFFORD A METHANE YIELD OF 0.21 CU M/KG VOLATILE SOLIDS ADDED UNDER AMBIENT CONDITIONS. THIS COMPARES FAVORABLY WITH AN ULTIMATE MESOPHILIC METHANE YIELD OF 0.26 CU M/KG VOLATILE SOLIDS ADDED. (1 DIAGRAM, 4 GRAPHS, 8 REFERENCES,)
[EGY]

37-00830
Pyrolysis of municipal solid waste components
Helt, J.E.; Agrawal, R.K.
Argonne Natl. Lab., Argonne, IL, USA
American Institute of Chemical Engineers Annual Winter Meeting Chicago, IL (USA) 10 Nov 1985
Publ.Yr: 1985
NTIS, SPRINGFIELD, VA (USA)
SUMMARY LANGUAGE - ENGLISH; DE86005536/GAR.
Languages: ENGLISH

Pyrolysis of Municipal Solid Waste (MSW) is a promising method of producing useful fuels. However, several large-scale pyrolysis plants have not performed as expected, producing low yields of inferior products. Reasons for past shortcomings include insufficient understanding of the fundamental mechanisms and kinetics. Current research is directed toward improved understanding of the basic thermokinetic mechanisms associated with pyrolytic conversion of MSW. Initial results from nonisothermal thermogravimetric analysis and bench-scale experiments of some MSW components are presented. The effect of heating rate on overall degradation and product formation over the temperature range of 300-475 exp 0 C is discussed.
[POL]

0153135 *86-052921
TWO-PHASE ANAEROBIC DIGESTION OF SOLID ORGANIC WASTES YIELDING BIOGAS AND COMPOST,
HOFENK G. ; LIPS S. J. ; RIJKENS B. A. ; VOETBERG J. W.
INST STORAGE & PROCESSING OF AGRI PRODUCE,
CEC REPORT EUR 9942 EN, 1985 (63)

NON US GOVT REPORT A NOVEL PROCESS FOR THE ANAEROBIC DIGESTION OF SOLID ORGANIC WASTES WITH BIOGAS AND COMPOST AS THE FINAL PRODUCTS WAS EVALUATED. SOLID MATTER IS CHARGED INTO A LIQUEFACTION ACIDIFICATION REACTOR, WHERE MATERIAL IS BROKEN DOWN BY ANAEROBIC MICROFLORA INTO VOLATILE FATTY ACIDS. THE LATTER ARE CONTINUOUSLY LEACHED BY PERCOLATING WATER, AND THE PERCOLATE IS PUMPED TO A DIGESTER WHERE THE DISSOLVED ORGANIC MATTER IS CONVERTED INTO BIOGAS AND TREATED WATER IS RECYCLED TO THE FIRST STAGE. THIS TWO-PHASE DIGESTION PROCESS APPEARS TO BE TECHNICALLY FEASIBLE FOR SOLID WASTES.
[EGY]

0150176 85-024404
ENERGY FROM BIOMASS AND WASTES: A REVIEW AND 1983 UPDATE,
KLASS DONALD L.
RESOURCES & CONSERVATION, MAR 85, V11, N3-4, P157(83)

JOURNAL ARTICLE DESPITE REDUCTIONS IN FEDERAL FINANCIAL SUPPORT FOR R&D IN FY83, EFFORTS TO DEVELOP AND APPLY TECHNOLOGY FOR FUELS AND ENERGY FROM BIOMASS AND WASTES CONTINUE. THE CURRENT SCOPE OF DOE BIOCONVERSION AND SOLID WASTE ENERGY PROGRAMS IS DETAILED. THE CONTRIBUTION OF ENERGY FROM THESE SOURCES IS EXPECTED TO INCREASE TO 4.2-4.5% OF THE TOTAL ENERGY SUPPLIED TO THE U.S. ECONOMY BY THE YEAR 2000. WOOD AND WOOD-WASTE COMBUSTION SYSTEMS ARE CURRENTLY THE MAIN SOURCES OF BIOMASS ENERGY IN THE U.S. TECHNOLOGIES UNDER DEVELOPMENT INCLUDE ANAEROBIC DIGESTION OF FARM AND INDUSTRIAL WASTES, REFUSED-DERIVED FUEL COMBUSTION, AND BIOMASS-DERIVED ETHANOL FUEL. (20 REFERENCES, 38 TABLES,)
[EGY]

0148654 *85-006199
DEMORESEARCH FOR RESOURCE AND ENERGY RECOVERY,
STESSEL RICHARD IAN ; PEIRCE J. JEFFREY
DUKE UNIV,
J PROFESSIONAL ACTIVITIES-ASCE, JAN 85, V111, N1, P22(11)

JOURNAL ARTICLE CURRENT INTEREST IN RESOURCE RECOVERY IN GENERAL AND MUNICIPAL WASTE-TO-ENERGY PRODUCTION IN PARTICULAR REQUIRES A RESEARCH-ORIENTED DEMONSTRATION FACILITY FOR DEVICES CAPABLE OF SEPARATING A VARIETY OF MUNICIPAL SOLID WASTE STREAMS. THESE FACILITIES MUST INCORPORATE BOTH BASIC AND APPLIED RESEARCH OBJECTIVES AS WELL AS TECHNOLOGY TRANSFER. DEMORESEARCH PROJECTS ARE ESSENTIAL TO THE SUCCESS OF RESOURCE RECOVERY. FEDERAL GOVERNMENT SUPPORT OF RESEARCH IN THIS AREA IS DISCUSSED. (1 DIAGRAM, 9 REFERENCES,)
[EGY]

78-01577

Safety and health considerations in handling, processing and storage facilities of refuse derived fuel.

Huang, W. C.
Consoer, Townsend & Assoc., Chicago, IL
American Society of Mechanical Engineers: Regulations & Compliance Conference St. Louis, Mo. May 16-18, 1977
In AMERICAN SOCIETY OF MECHANICAL ENGINEERS. PAPER 77-RC-11 8 pp
Publ.Yr: (1977?)
illus. refs.
Abs.
Languages: ENGLISH
Doc Type: CONFERENCE PAPER

Explosions are the major safety hazard associated with refuse-derived fuel (RDF) facilities using the dry process. A preventive approach consists of hazardous waste source reduction through strict enforcement of ordinances, visual screening and removal of hazardous waste prior to size reduction, installation of a water spray and explosion suppression system, and a good design practice to eliminate the danger of secondary explosions. Protective measures include explosion vents, safety barriers, administrative and operational controls, first aid stations, and emergency exit passageways. Conventional fire-fighting equipment is effective in controlling fires. Prevention of fire through elimination of explosion hazards, smoke detection devices, and administrative and operational controls should be emphasized. Injuries may occur as a result of improper protective device and operational negligence. Traffic control, emergency stop switches for conveyors, shrouds around shredder openings, and remote monitoring equipment would reduce accidents. Airborne contaminants can be controlled by reducing mass transfer mechanisms, creating an environment less favorable to microorganism growth, and mechanical filtration. A closed drainage system with strategically located hose bibbs should be provided for sanitary maintenance. The potable water source should be protected with both backflow preventor and air gap for the wet process. Acoustical treatment combined with vibration control and sound attenuation could greatly reduce peak sound power levels. (FT)
[POL]

GENERAL

0186446 *87-000810
DOWN IN THE DUMPS,
STEINHART PETER
AUDUBON, MAY 86, V88, N3, P102(8)

JOURNAL ARTICLE A CRISIS IS PENDING IN THE FIELD OF MUNICIPAL REFUSE DISPOSAL. IN THE U.S., THE AVERAGE CITIZEN SENDS 5 LB/DAY OF GARBAGE TO DUMPS, COMPARED WITH 2.9 LB/DAY IN 1960. THE NUMBER OF LANDFILLS AVAILABLE FOR HANDLING THIS REFUSE IS DECLINING: SINCE 1979, 3500 LANDFILLS HAVE CLOSED. MUNICIPALITIES ARE TRYING TO FIND NEW DUMP SITES, BUT NOBODY WANTS A DUMP IN THEIR COMMUNITY. CITIZENS HAVE AMPLE REASON TO FEAR DUMPS, AS MISMANAGEMENT AT DISPOSAL SITES OVER THE LAST 20 YEARS HAS RESULTED IN MANY INCIDENCES OF SOIL AND GROUNDWATER CONTAMINATION. TRENDS IN RECYCLING HAVE NOT BEEN ENCOURAGING; THE REAL PROBLEM HAS BEEN TO CONVINCE INDUSTRY TO USE RECYCLED MATERIALS. GOVERNMENT AGENCIES MUST PLACE EMPHASIS ON SAFE LANDFILL DESIGNS, INCINERATION, AND RESOURCE RECOVERY.
[ENV]

87-02370
Five perspectives on a hot topic
WASTE AGE VOL. 17, NO. 7, p. 28+, Publ.Yr: 1986
Languages: ENGLISH

Recycling certainly is a hot topic right now, especially in cities, states, and regions where existing sanitary landfills are nearing capacity and new solid waste disposal facilities are not being sited quickly enough. The following "forum" of sorts presents several interesting viewpoints on the subject, all of recent vintage, from agencies, individuals, and groups with a heavy stake in the future of recycling.
[POL]

19
Solid Waste Resource Recovery Options
Vesiland, P.
Duke University
North Carolina Pollution Prevention Pays Program
Raleigh, North Carolina, 28pp September, 1986

An overview of the solid waste resource recovery alternatives available to North Carolina communities is presented. Information on the available solid waste management options, the advantages and disadvantages of the identified alternatives, and case studies of their successful use are included. This document is intended to provide local officials with basic information on waste management alternatives to landfilling.
[NC]

0187997 *87-012353

ENVIRONMENTAL IMPACT CONSIDERATIONS IN RECYCLING SOLID WASTES,
VISALLI JOSEPH R.
NEW YORK STATE ENERGY R&D AUTHORITY,
J RESOURCE MANAGEMENT & TECHNOLOGY, DEC 85, V14, N4, P241(5)

JOURNAL ARTICLE THE CAUSES AND NATURE OF SOME OF THE POTENTIAL ENVIRONMENTAL PROBLEMS ASSOCIATED WITH RECYCLING AND COMPOSTING ARE OUTLINED. THE NEED TO CONSIDER THE POTENTIAL FOR SUCH PROBLEMS ASSOCIATED WITH ALL SOLID WASTE MANAGEMENT ALTERNATIVES BEFORE MAKING CHOICES IS STRESSED. RECYCLING OR COMPOSTING CAN CREATE AIR, WATER, AND SOLID WASTE PROBLEMS BECAUSE OF THE NATURE OF REFUSE ITSELF. CHEMICAL CHARACTERISTICS OF REFUSE ARE DESCRIBED; THREE SOURCES OF CONTAMINANTS WHICH CAN CAUSE ENVIRONMENTAL PROBLEMS ARE IDENTIFIED. THESE ARE: CHEMICALS IN THE REFUSE; CHEMICALS ADDED TO WASTE TO FACILITATE THE RECYCLING PROCESS; AND SECONDARY CHEMICAL COMPOUNDS INADVERTENTLY CREATED DURING RECYCLING.
[ENV]

0187995 *87-012351

WASTE COMPOSITION STUDIES: PROTOCOLS FOR RECYCLERS,
MCCAMIC FREDERICK W.
FERRAND & SCHEINBERG ASSOC, NJ,
J RESOURCE MANAGEMENT & TECHNOLOGY, DEC 85, V14, N4, P229(6)

JOURNAL ARTICLE METHODS OF WASTE CHARACTERIZATION, PARTICULARLY THE CONDUCT OF FIELD STUDIES, ARE REVIEWED. WAYS OF ENSURING THAT WASTE CHARACTERIZATION PROVIDES INFORMATION THAT IS USEFUL TO RECYCLERS ARE PROPOSED. SUCH STUDIES CAN AID IN THE DESIGN OF A RESOURCE RECOVERY PLANT AND IN RECYCLING PLANNING. ELEMENTS OF A MEANINGFUL CLASSIFICATION SYSTEM ARE HIGHLIGHTED. PRODUCT-MATERIALS FLOW ANALYSIS IS EXPLAINED AS A THEORETICAL APPROACH TO WASTE STREAM CHARACTERIZATION.
[ENV]

0175349 *85-001498

COMPLEX METHOD FOR WASTE UTILIZATION BY CLOSED INDUSTRIAL AND BIOLOGICAL CYCLES,

HARSANYI J.; SIGMOND G.
HUNGALU ENGINEERING & DEVELOPMENT CENTRE, HUNGARY,
INDUSTRY & ENV, APR-JUN 84, V7, N2, P39(4)

JOURNAL ARTICLE RECYCLING AND REUTILIZATION OF INDUSTRIAL AND HOUSEHOLD WASTES ARE IN THE BEST INTEREST OF EACH COUNTRY. AS OF YET, NO UNIFORM METHOD OF REPROCESSING HOUSEHOLD WASTES HAS BEEN DEVELOPED. THE PRESENT STATE OF PROCESSING HOUSEHOLD WASTES, THEIR VALUE, POSSIBILITIES AND GENERAL DESCRIPTIONS OF WASTE UTILIZATION PROCESSES AND A FEASIBLE COMPLEX WASTE UTILIZATION METHOD ARE DISCUSSEED. A PROCESS FLOW DIAGRAM OF WASTE CLASSIFICATION AND A TECHNOLOGICAL SCHEME OF WASTE CLASSIFICATION ARE PROVIDED. (2 DIAGRAMS, 10 REFERENCES, 4 TABLES,)
[ENV]

128

Minnesota market survey report of commonly recycled materials found in municipal refuse

Minnesota Pollution Control Agency
Solid and Hazardous waste division, MPCA, Januray 1983

The purpose of the report is to encourage recycling and the manufacturing of products made from recycled and recovered materials.
[MN]

PUBLIC EDUCATION

0184929 *86-060843
KAB ORGANIZATION AND KAB SYSTEM,
POWERS ROGER W.
KEEP AMERICA BEAUTIFUL INC, NY,
J RESOURCE MANAGEMENT & TECHNOLOGY, OCT 85, V14, N2, P107(5)

JOURNAL ARTICLE KEEP AMERICA BEAUTIFUL (KAB) HAS SPONSORED RESEARCH TO REPOSITION THE LITTER PROBLEM AS A BEHAVIORAL ISSUE. ONE RESULT OF THIS RESEARCH IS THE KAB SYSTEM, A PROGRAM WHICH CAN BE REPLICATED IN EVERY COMMUNITY TO REDUCE LITTER THROUGH VOLUNTARY MEANS. THE PUBLIC MUST RECOGNIZE THAT LITTER COMES FROM SEVEN SOURCES, AND THEY ALL MUST BE DEALT WITH IS REDUCTIONS IN LITTER ARE TO BE SUSTAINED. THE LITTER CONTROL PROGRAMS INVOLVE PUBLIC EDUCATION, POSITIVE REINFORCEMENT, PUBLIC PARTICIPATION, AND PHOTOMETRIC SURVEYS TO DOCUMENT THE EXTENT OF LITTER. THE MOST EFFECTIVE MEANS OF ACCELERATING THE GROWTH OF THE KAB SYSTEM HAS BEEN THE ADOPTION OF KAB STATEWIDE PROGRAMS IN 10 STATES TO DATE.
[POL]

0182058 *86-040635
TOWARD A CONSERVING SOCIETY,
THOMAS LEE M. ; HELLMAN KARL ; PLEHN STEFFEN W. ; LEWIS JACK ; HUISINGH DONALD ; ROUMPF JUDY ; JORDAN WILLIAM
EPA ADMINISTRATOR,
EPA J, JUL-AUG 85, V11, N6, P2(31)

JOURNAL ARTICLE THE ENVIRONMENTAL AWAKENING THAT SURFACED IN THE U.S. DURING THE 1960S AND EARLY 1970S HAS BENEFITTED THE NATION IN TERMS OF ENVIRONMENTAL QUALITY AND TECHNOLOGY PLANNING. THE RESULTS OF THE DRAMATIC INCREASE IN NATIONAL ENVIRONMENTAL CONCERN CAN BE SEEN IN ALL PHASES OF INDUSTRY AND THE ECONOMY. A REVOLUTION HAS TAKEN PLACE IN THE DESIGN OF THE AUTOMOBILE AS A CONSEQUENCE OF ENVIRONMENTAL CONCERNS. THE MOST MASSIVE AND EXPENSIVE POLLUTION CONTROL RETROFIT EVER UNDERTAKEN AT A NORTH AMNERICAN POWER PLANT WAS RECENTLY COMPLETED BY OHIO EDISON CO. DEVELOPMENTS IN SOLID WASTE CONTROL, INDUSTRIAL RECYCLING, AND INTEGRATED PEST MANAGEMENT ARE ALSO ADDRESSED.
[ENV]

0147449 *84-024475
PSYCHOLOGY'S ROLE IN THE CONSERVING SOCIETY,
OSKAMP STUART
CLAREMONT COLLEGE,
POPULATION & ENV, WINTER 83, V6, N4, P255 (39)

JOURNAL ARTICLE ENERGY AND RESOURCE CONSERVATION WILL BECOME ESSENTIAL AS THE FINITE RESOURCES OF THE EARTH BECOME INCREASINGLY DIFFICULT TO EXPLOIT. PSYCHOLOGISTS AND OTHER SOCIAL SCIENTISTS CAN HELP IN THE TRANSITION TO A CONSERVING SOCIETY. RELEVANT RESEARCH HAS BEEN INITIATED IN ENVIRONMENTAL POLLUTION, RECYCLING AND SOLID WASTES, LITTER REDUCTION, AND ENERGY CONSERVATION. APPROACHES USED IN THESE STUDIES, SUCH AS SOCIAL INTERACTION SCHEMES, BEHAVIORAL RESEARCH, AND ANALYSIS OF ENVIRONMENTAL AND ENERGY ATTITUDES, ARE DISCUSSED. ADDITIONAL EFFORT SHOULD BE DIRECTED TOWARDS CONSIDERATION OF SECTORAL ENERGY CONSERVATION AND COMMUNITY ACTION CAMPAIGNS. (NUMEROUS REFERENCES)
[EGY]

0186977 *87-003932
ENCOURAGING ENVIRONMENTALLY APPROPRIATE BEHAVIOR: THE ROLE OF INTRINSIC MOTIVATION,
DE YOUNG RAYMOND
UNIV OF MICHIGAN,
J ENV SYSTEMS, 1985-86, V15, N4, P281(12)

RESEARCH ARTICLE A STUDY SOUGHT TO DOCUMENT THE TYPES OF MOTIVES PEOPLE HAVE TO CONSERVE NATURAL RESOURCES DURING THEIR DAILY ACTIVITIES. PARTICIPATION AND RECYCLING BEHAVIORS ASSOCIATED WITH A CURB-SIDE COLLECTION PROGRAM IN ANN ARBOR, MI, WERE ANALYZED. DATA FROM 263 RESPONDENTS TO A QUESTIONNAIRE WERE SUBJECTED TO DIMENSIONAL ANALYSIS AND ANALYSIS OF VARIANCE. RESULTS REVEAL THAT PEOPLE HAVE A VARIETY OF MOTIVES FOR CONSERVING RESOURCES AND DERIVE A SERIES OF DISTINCT SATISFACTIONS FROM BOTH RECYCLING AND REUSING MATERIALS. FINDINGS SUPPORT THE NOTION OF A STRONG RELATIONSHIP BETWEEN INTRINSIC MOTIVATION AND EVERYDAY CONSERVAYION BEHAVIOR.
[ENV]

87-02283
Neither disposal method is the final answer
Hickman, H.L.,Jr.
Gov. Refuse Coll. and Disposal Assoc.
WORLD WASTES VOL. 29, NO. 13, p. 18, Publ.Yr: 1986
Languages: ENGLISH

The competition and animosity between many waste managers sparked by the topic of resource recovery would be greatly reduced if the industry could agree that resource recovery involves recycling, incinerating and landfilling. And neither of these disposal methods is the end-all answer to our disposal problems. The public has perhaps heightened this competition between waste managers by showing its approval for recycling and its fear and contempt for landfills and incineration facilities. The public would probably like to see everything recycled, but as the following examination of the municipal solid waste stream (MSW) will show, recycling alone is not always practical or financially feasible.
[POL]

86-08306

They have met the enemy and..

Hickman, H.L.

Gov. Refuse Collect. and Disposal Assoc., Washington, DC, USA

WORLD WASTES VOL. 29, NO. 6, p. 52, Publ.Yr: 1986

Languages: ENGLISH

We are faced with an interesting phenomenon in the way the public reacts to solid waste management. Everywhere the public is resisting every effort by local government and the private sector to site, construct and operate solid waste management facilities. Solid wastes belong to the public, not the owners and operators of municipal solid waste management systems. Ownership makes no difference, however, and the NIMBY attitude prevails everywhere. The public is totally opposed to the use of the land for solid waste disposal. There was a time when they argued against dumps because of rats, flies, fires, smoke, litter, etc. We replaced the dump with the sanitary landfill and now the public argues against the use of the sanitary landfill on the basis of groundwater contamination.

[POL]

86-08327

Economic impact of pending regulations on the disposal of hazardous and nonhazardous energy wastes

Fradkin, L.; Barisas, S.; Streets, D.

Energy and Environ. Syst. Div., Argonne Natl. Lab., Argonne, IL 60439, USA

INT. J. ENERGY SYST VOL. 6, NO. 2, pp. 56-60, Publ.Yr: 1986

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

This study evaluates the impact of the Resource Conservation and Recovery Act (RCRA) on utility and industrial coal-fired energy facilities. Information presented herein should be useful for policy decisions regarding solid and hazardous wastes from energy production.

[ENV]

0186962 *87-003917

ECONOMIC EVALUATION OF AN ELECTROLYTIC PROCESS TO RECOVER LEAD FROM SCRAP BATTERIES,

PHILLIPS THOMAS A.
USBM, MD,
USBM REPORT IC 9071, 1986 (23)

FED GOVT REPORT THE ECONOMIC FEASIBILITY OF A USBM ELECTROLYTIC PROCESS FOR RECOVERING LEAD FROM SCRAP LEAD-ACID BATTERIES IS ASCERTAINED. IN THE PROCESS, BATTERIES ARE CRUSHED AND SEPARATED INTO METAL AND SLUDGE FRACTIONS. THE METAL FRACTION IS CAST AS ANODES AND ELECTRO-REFINED; PB IN THE SLUDGE FRACTION IS CONVERTED TO PB CARBONATE AND THEN DISSOLVED IN A FLUOSILICIC ACID ELECTROLYTE FROM WHICH PURE PB METAL IS ELECTROWON. COST ESTIMATES ARE GENERATED FOR A PLANT PROCESSING 10,000 SCRAP BATTERIES PER DAY. THE FIXED CAPITAL COST IS ESTIMATED TO BE $14 MILLION, WITH OPERATING COSTS OF $0.15/LB PB RECOVERED. A PB SELLING PRICE OF ABOUT $0.21/LB IS NEEDED TO OBTAIN A 20% INTEREST RATE OF RETURN.
[POL]

87-00848

Capital costs of resource recovery facilities in the USA

Rhyner, C.R.; Wenger, R.B.
Univ. Wisconsin, Green Bay, WI 54301, USA
WASTE MANAGE. RES VOL. 4, NO. 3, pp. 321-326, Publ.Yr: 1986
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

The capital costs of existing and proposed resource recovery facilities in the U.S.A. are analysed as a function of facility size and type. Empirical relationships are developed to relate capital costs of modular incinerators, heat-recovery incinerators, rotary combustors, and refuse-derived fuel facilities to design capacities. The scale factors are compared to published values. Economies of scale are not present except for small refuse-derived fuel and steam generating facilities handling less than 1000 tonne day.
[POL]

0187996 *87-012352

RECENT FEDERAL LEGISLATION IMPACTING SOLID WASTE MANAGEMENT, WASTE-TO-ENERGY FACILITIES, RECYCLING AND FLOW CONTROL ORDINANCES,

KOVACS WILLIAM L.
JAECKLE FLEISCHMANN & MUGEL, DC,
J RESOURCE MANAGEMENT & TECHNOLOGY, DEC 85, V14, N4, P235(5)

JOURNAL ARTICLE THE 1984 AMENDMENTS TO THE RESOURCE CONSERVATION & RECOVERY ACT IMPACT THE SIZE OF WASTE-TO-ENERGY FACILITIES CONSTRUCTED, GUARANTEE THE RECYCLING INDUSTRY ACCESS TO THE RECYCLABLE MATERIALS IN THE SOLID WASTE STREAM, AND LIMIT A LOCAL GOVERNMENT'S LIABILITY FOR VIOLATION OF ANTITRUST LAWS BY THE ENACTMENT OF AN OVERLY BROAD FLOW CONTROL ORDINANCE. THE AMENDMENTS ALLEVIATE THE POTENTIAL CONFLICT BETWEEN RECYCLERS AND WASTE-TO-ENERGY FACILITIES BECAUSE THEY REQUIRE THAT THE INTERESTS OF BOTH INDUSTRIES BE CONSIDERED IN THE PLANNING PROCESS. UNDER THE LOCAL GOVERNMENT ANTITRUST ACT OF 1984, MUNICIPALITIES ARE RELIEVED OF THE ANXIETY OF BEING SUED FOR MILLIONS OF DOLLARS FOR SIMPLY ATTEMPTING TO MAKE GOOD FAITH EFFORTS TO SOLVE THEIR SOLID WASTE PROBLEMS.
[ENV]

0148882 *85-008268

THE SWEET SMELL OF PROFITS FROM TRASH,

LEINSTER COLIN
FORTUNE, APR 1, 85, V111, N7, P150(5)

JOURNAL ARTICLE ALTHOUGH THE RECYCLING FAD OF THE 1970S WAS A COSTLY FAILURE, SOME BIG NEW CORPORATE PLAYERS (SUCH AS SIGNAL COS. OF LA JOLLA, CA) SEE A PAYOFF IN PLANTS THAT BURN MUNICIPAL WASTE TO PRODUCE ELECTRICITY. FOR EXAMPLE, MAYOR ED KOCH WANTS FIVE PLANTS FOR NEW YORK CITY. BY 1985 THE INDUSTRY NATIONWIDE COULD BE REAPING $4 BILLION/YEAR. MOST OF THE PLANTS WOULD USE THE PROVEN TECHNIQUE OF MASS BURNING. ISSUES OF FINANCING, CONCERNS OVER HAZARDOUS EMISSIONS FROM INCINERATION, AND PUBLIC OPPOSITION TO FACILITY SITES ARE EXAMINED. (5 PHOTOS,)
[EGY]

0150784 *85-031565

''PRIVATIZATION''-A NEW CONCEPT OF PRIVATE FINANCING FOR MUNICIPAL ENERGY/UTILITY PROJECTS,

CASSELMAN J. K.
WELLS FARGO LEASING CORP,
STRATEGIC PLANNING & ENERGY MANAGEMENT, SUMMER 85, V5, N1, P27(14)

JOURNAL ARTICLE THE PUBLIC SECTOR WILL BENEFIT FROM THE INJECTION OF PRIVATE RISK CAPITAL INTO MUNICIPAL PROJECTS. THE PRIVATE SECTOR GAINS FROM PRIVATIZATION OF MUNICIPAL PROJECTS IF IT SUCCEEDS IN CONSTRUCTING AND OPERATING THEM ON AN EFFICIENT AND PROFITABLE BASIS. VARIOUS ASPECTS OF PRIVATIZATION ARE COVERED, INCLUDING TAX-ORIENTED PRIVATE FINANCE AND COMBINED BOND AND LEASE FINANCING. PRIVATE FINANCING CONSIDERATIONS FOR MUNICIPAL RESOURCE RECOVERY/SOLID WASTE ENERGY PROJECTS, COGENERATION PROJECTS, AND WASTEWATER TREATMENT FACILITIES ARE EXAMINED. (3 DIAGRAMS,)
[EGY]

0150203 *85-025128

RESOURCE RECOVERY RATINGS APPROACH,

MAURICE DIANE R. ; CHEW WILLIAM; GENESEN BARRY; MARKHAM MARIA
STANDARD & POOR'S CORP,
J RESOURCE MANAGEMENT & TECHNOLOGY, NOV 84, V13, N3, P119(7)

JOURNAL ARTICLE STRATEGIES USED TO PROVIDE FINANCIAL RATINGS FOR RESOURCE RECOVERY PROJECTS, PARTICULARLY THOSE BURNING WASTE FOR CONVERSION TO ENERGY, ARE EXPLAINED. ANALYSIS OF EACH PROJECT BEGINS WITH A REVIEW OF THE LEGAL DOCUMENTS; WASTE DISPOSAL AND ENERGY AGREEMENTS ARE ASSESSED. TECHNOLOGICAL RISK ISSUES OF IMPORTANCE INCLUDE CONSTRUCTION RISK AND OPERATING RISK. PROJECTED RESULTS FOR SELECTED FACILITIES BASED ON 1987 BASE CASE PROJECTIONS ARE TABULATED. (2 DIAGRAMS, 1 MAP, 5 TABLES,)
[EGY]

0144437 84-021462

ENERGY CONSERVATION AND RECYCLING IN THE PAPER INDUSTRY ,

GUNN, TIMOTHY L. ; HANNON BRUCE
UNIV OF ILLINOIS
RESOURCES & ENERGY, SEP 83, V5, N3, P243 (18)

THE AMOUNT OF WASTE PAPER THAT SHOULD BE RECYCLED BY THE PAPER INDUSTRY TO MINIMIZE THE TOTAL ENERGY USED IN THE U.S. IS DETERMINED. THE ECONOMIC CONSEQUENCES OF SUCH RECYCLING ARE ADDRESSED. A LINEAR PROGRAM TO APPROXIMATE ENERGY FLOWS, ENERGY COSTS, AND RECYCLING COSTS WAS EMPLOYED IN THE ANALYSIS. SUBSTANTIAL INCREASES IN PAPER RECYCLING ARE JUSTIFIED ON THE BASIS OF INCREASED COSTS OF ENERGY SINCE 1974. FUTURE INCREASES IN RECYCLING ARE ALSO JUSTIFIED ON THE BASIS OF HISTORICALLY VOLATILE SCRAP PRICES AND CYCLIC PAPER DEMAND. (1 DIAGRAM, 4 GRAPHS, 17 REFERENCES, 4 TABLES)
[EGY]

0167873 *83-006533
HOUSEHOLD WASTE: SEPARATE COLLECTION AND RECYCLING ,
OECD REPORT, 1983, (141)

SEPARATE COLLECTION AND RECYCLING OF MATERIALS FROM DOMESTIC WASTE CAN BE AN IMPORTANT PART OF OECD'S SOLID WASTE MANAGEMENT POLICY: IT CAN REDUCE THE VOLUME OF WASTE AND DISPOSAL COSTS, AND IT CAN PROVIDE SAVINGS IN RAW MATERIALS AND ENERGY CONSUMPTION. MANY RECYCLING SCHEMES, HOWEVER, RUN INTO PRACTICAL PROBLEMS AND ARE NOT ECONOMIC IN THE LONG-RUN. CASE STUDIES ON THE SEPARATE COLLECTION OF GLASS, PAPER AND BOARD, AND MULTI-MATERIALS, AND POLICY AND SOCIOECONOMIC ASPECTS. RECOVERED MATERIALS COMPETE WITH PRIMARY RAW MATERIALS IN THE MARKETPLACE IN TERMS OF PRICE, QUALITY, AND AVAILABILITY OF SUPPLY. EDUCATION AND INFORMATION PROGRAMS TO INCREASE PUBLIC PARTICIPATION IN COLLECTION AND RECYCLING SHCEMES ARE OUTLINED. (NUMEROUS REFERENCES, TABLES)
[EGY]

0181102 *86-033744
RETURNS FROM THE EMPIRE STATE,
HERTZBERG RICHARD
RESOURCE RECYCLING, MAR-APR 85, V4, N1, P12(7)

JOURNAL ARTICLE A RETURNABLE CONTAINER LAW WAS ENACTED IN NEW YORK IN 1983. UNDER THE LAW, A MINIMUM DEPOSIT OF 5 IS REQUIRED FOR BEVERAGES IN REFILLABLE AND NON-REFILLABLE METAL, GLASS, AND PLASTIC CONTAINERS UP TO 1 GAL. THE POLITICAL AND ECONOMIC EFFECTS OF THE LAW ON THE BEVERAGE INDUSTRY ARE EXAMINED. STATEWIDE RETURN RATES FOR BEER CONTAINERS HAVE BEEN ABOUT 86% AND FOR SOFT DRINK CONTAINERS ABOUT 70%. THE 1.5 HANDLING FEE DOESN'T APPEAR TO ADEQUATELY COVER THE COSTS INCURRED BY STORES AND THIRD-PARTY FIRMS IN PREPARING MATERIALS. (2 DIAGRAMS, 1 DRAWING, 5 PHOTOS,)
[ENV]

0160303 *82-005987
MICHIGAN'S DEPOSIT LAW,
MICHIGAN JOINT COMM REPORT, DEC 80 (40)

SPECIAL REPORT THE MICHIGAN DEPOSIT LAW WAS IMPLEMENTED TO ENCOURAGE THE RECYCLING OF METAL AND GLASS BEVERAGE CONTAINERS. THE IMPACTS OF THE LAW ON CONSUMERS AND THE BEVERAGE INDUSTRY ARE ADDRESSED. STRONG PUBLIC SUPPORT FOR THE RETURNABLE BOTTLE SYSTEM HAS BEEN EXPRESSED. TOTAL LITTER ON HIGHWAYS HAS DECREASED SINCE ENACTMENT OF THE LAW. EACH YEAR, 15,000 TONS OF ALUMINUM AND STEEL AND 65,000 TONS OF GLASS ARE BEING RECYCLED INSTEAD OF BURIED IN LANDFILLS. OPERATING COSTS FOR INDUSTRY HAVE DECLINED, BUT COSTS FOR BEVERAGE DISTRIBUTORS HAVE INCREASED.
[ENV]

0153271 *81-006089
STATES' EXPERIENCE WITH BEVERAGE CONTAINER DEPOSIT LAWS SHOWS POSITIVE BENEFITS,
GAO REPORT PAD-81-08, DEC 11, 80 (67)

SPECIAL REPORT SEVERAL STATES HAVE ENACTED LAWS REQUIRING REFUNDABLE DEPOSITS ON BEVERAGE CONTAINERS. USING DATA BASED ON THE EXPERIENCE OF FOUR STATES-MAINE, MICHIGAN, OREGON, AND VERMONT-GAO ESTIMATES OF THE IMPACT OF THESE MANDATORY DEPOSIT LAWS HAVE BEEN UPDATED. LITTER, SOLID WASTE, AND ENERGY AND RAW MATERIAL USE HAVE BEEN REDUCED. ALTHOUGH THESE REDUCTIONS ARE FAIRLY CERTAIN OUTCOMES, REDUCTIONS IN RAW MATERIALS AND ENERGY DEPEND ON CONSUMER AND INDUSTRY REACTION TO THE TYPES OF CONTAINERS BOUGHT AND SOLD. (4 GRAPHS, 22 TABLES)
[ENV]

STATE LEGISLATION AND PROGRAMS

86-06987

Illinois County prepares for regional waste program

Stein, S.M.; Becker, J.F.
Gordon and Glickson, Chicago, IL, USA
WORLD WASTES VOL. 29, NO. 5, pp. 28-30, Publ.Yr: 1986
Languages: ENGLISH

The concept of regional government is often maligned as an unnecessary intrusion on the power of municipalities to regulate and police services within their own boundaries. Yet, regional approaches to municipal problems have a good track record. The creation of the wide area Chicago Metropolitan Sanitary District a Century ago saved the city from disaster during a cholera outbreak, and the orginally unpopular Regional Transportation Authority in the northern part of Illinois has well proved its worth to participating municipalities. Today, some Illinois areas are looking at a regional approach for "solid waste management" to protect people's health and the integrity of the groundwater and other resources. The reasons are economic, environmental and legal.
[POL]

86-08357

Portland outlines waste reduction program

Rifer, W.
Solid Waste Dep., Metropolitan Serv. Dist., Portland, OR, USA
BIOCYCLE VOL. 27, NO. 8, pp. 33-34, Publ.Yr: 1986
Languages: ENGLISH

The Metropolitan Service District (Metro), an elected regional government for the Portland (Oregon) area, has launched an ambitious effort to reduce the amount of solid waste being landfilled. The current solid waste system in the Portland area consists of: 1) a healthy private recycling program which is achieving a nearly 22 percent reduction of waste, 2) a private garbage collection system which is regulated by local governments (half franchised and half competitive), and 3) a regional disposal system operated by Metro which relies on land-filling. The system envisioned by the Metro Waste Reduction Program will add significant diversity to the disposal system, and will, by necessity, involve the collection, recycling and disposal systems in a coordinated partnership.
[POL]

0175365 *85-001518

NEW YORK STATE INDUSTRIAL MATERIALS RECYCLING PROGRAM: THE SECOND YEAR,

SIMPSON PICKETT T.
NEW YORK STATE ENV FACILITIES CORP.
MASSACHUSETTS DEPT ENV MANAGEMENT HAZARDOUS WASTE SOURCE REDUCTION CONF, MA, OCT 13, 83, P227(22)

CONF PAPER THE NEW YORK STATE ENVIRONMENTAL FACILITIES CORP. IS REQUIRED BY STATE LAW TO PROMOTE ACTIVITIES FOR REDUCING THE AMOUNT OF WASTE NEEDING OFFSITE DISPOSAL. THE PUBLIC BENEFIT CORPORATION ENCOURAGES THE EXCHANGE OF INDUSTRIAL WASTE MATERIALS FOR RECYCLING, AND PROVIDES INDUSTRIES WITH RELATED TECHNICAL INFORMATION AND ASSISTANCE. PASSIVE AND ACTIVE WASTE EXCHANGE EFFORTS ARE DETAILED, AS ARE INDUSTRIAL FINANACING AND TECHNOLOGY TRANSFER SCHEMES. (3 DIAGRAMS, 5 TABLES)
[ENV]

365541 DA

WASTE PRODUCTS IN MISSOURI WITH POTENTIAL HIGHWAY APPLICATION

Missouri Highway and Transportation Dept., Jefferson City. Div. of Materials and Research.; Federal Highway Administration, Washington, DC.
Apr 1982 70p
AVAILABLE FROM: National Technical Information Service 5285 Port Royal Road Springfield Virginia 22161
SUBFILE: NTIS
REPORT NO: MCHRP-81-2; FHWA/RD-82-P0007 PB82-260415

A statewide survey to locate solid waste products having potential for highway applications was conducted during 1981. The survey inventory includes 305 separate entries representing some 80 million tons of waste material currently accumulating at an annual rate of about 5 million tons. Due to the State being a prime source of metal ore mining and smeltering, vast tonnages of mine tailings have accumulated. Also, considerable tonnages of electric utility waste products continue to accumulate in the form of fly ash, dry bottom boiler ash, and wet bottom boiler slag. Possible uses for each waste material product are cited. From the summarized inventory, certain waste products were selected that appear to warrant further evaluation.
[TRIS]

III.NON-HAZARDOUS SOLID WASTE

CASE STUDIES

0184606 *86-060216

TIRE RECOVERY: BALTIMORE FIRM SEEKS SOLUTION; COMPANIES HANDLE PROCESSING, MARKETING,

GREENHUT STEVE ; STEINBERGER MAUREEN F.
(RESOURCE CONSERVATION CONSULTANTS, OR),
RESOURCE RECYCLING, NOV-DEC 85, V4, N5, P24(6)

JOURNAL ARTICLE SEVERAL U.S. COMPANIES ARE RECYCLING TIRES ON A LARGE SCALE. THE TIRES USUALLY ARE SHREDDED AND SOLD AS A FUEL SUPPLEMENT, AS AN ADDITIVE TO NEW RUBBER PRODUCTS, OR AS A COMPONENT OF ROAD SURFACES. EXAMPLES OF SUCCESSFUL TIRE RECYCLING OPERATIONS REVEAL THE DIVERSE PROCESSING AND MARKETING STRATEGIES EMPLOYED BY SIX COMPANIES. THE EXPERIENCES OF ONE HAULER IN BALTIMORE, MD, CONCERNING SCRAP TIRE TRANSPORT, SHREDDING, AND MARKETING ARE SUMMARIZED.
[ENV]

199

Strategies for water and waste reduction in dairy food plants

Harper, W.J.; Delaney, A.M.; et al.
U.S. EPA Water Engineering Research Laboratory, Cincinnati, OH
Report No. EPA 600/S2-85-076, August 1985

A study was conducted at a large dairy plant to determine its main waste areas and the economic feasibility of reducing this waste. It was determined that material reduction can be economically achieved in dairy plants.
[MN]

0184603 *86-060213

RECYCLING IN SAN JOSE,

PAPKE CHARLES
RESOURCE RECYCLING, NOV-DEC 85, V4, N5, P12(4)

JOURNAL ARTICLE IN RESPONSE TO A SHORTAGE OF LANDFILL SPACE FOR MUNICIPAL GARBAGE, THE CITY OF SAN JOSE, CA, ADOPTED IN 1985 A SIX-YEAR WASTE REDUCTION PLAN. THE PLAN INTEGRATES RECYCLING PROVISIONS IN DISPOSAL AND COLLECTION CONTRACTS WITH SPECIFIC WASTE RECYCLING PROGRAMS. A PILOT PROGRAM IS TESTING THE EFFICACY OF CURBSIDE COLLECTION OF DOMESTIC WASTE. CURRENTLY ABOUT 200 TONS OF MATERIAL ARE RECOVERED EACH MONTH. THE TOTAL WILL REACH 300 TONS PER MONTH WHEN PLANNED EDUCATIONAL AND PROMOTIONAL ACTIVITIES ARE FULLY IMPLEMENTED. A CITYWIDE COLLECTION AND RECYCLING PROGRAM IS ESTIMATED TO HAVE AN ANNUAL COST TO THE CITY OF $1.7 MILLION COMPARED WITH $18.7 MILLION FOR COLLECTION AND DISPOSAL OF REMAINING WASTES.
[ENV]

0149856 *85-021218
MUNIPICAL WASTE USED FOR LARGE SCALE COGENERATION,
BLASIUS GARY F.
OCCIDENTAL CHEMICAL CORP, NY,
CHEMICAL ENGINEERING PROGRESS, MAR 85, V81, N3, P64(6)

JOURNAL ARTICLE OCCIDENTAL CHEMICAL CORP., NY, IS THE FIRST U.S. MAJOR MANUFACTURER TO SUCCESSFULLY INTEGRATE A LARGE-SCALE COGENERATION FACILITY FUELED BY MUNICIPAL SOLID WASTE WITH ITS CHEMICAL MANUFACTURING FACILITIES. THE RESOURCE RECOVERY UNITS CURRENTLY PROCESS AND BURN 10,000 TONS/WEEK OF MUNICIPAL SOLID WASTE ON A CONTINUOUS BASIS TO PRODUCE STEAM AND ELECTRICITY. THE WASTE PROCESSING FACILITY IS BASED ON A SHREDDING/AIR CLASSIFICATION TECHNOLOGY TO GENERATE REFUSE-DERIVED FUEL. MATERIAL HANDLING, BOILER INFEED SYSTEM, STORAGE AND RECLAMATION, AND BOILER TUBE WASTAGE ARE CONSIDERED. THE FACILITY OPERATES EFFICIENTLY WITH AN ON-STREAM FACTOR ABOVE 90% FOR BOTH THE PROCESSING PLANT AND THE BOILERS. (4 DIAGRAMS, 2 GRAPHS, 2 PHOTOS, 6 REFERENCES,)
[EGY]

1017315 PB84-103761
Household Hazardous Waste Disposal Project. Metro Toxicant Program Report Number 1C. Public Opinions and Actions
(Final rept. 1981-82)
Galvin, D. V. ; Guss, L. ; Leraas, J. L.
Municipality of Metropolitan Seattle-METRO, WA. Water Quality Div.
Corp. Source Codes: 070006001
Sponsor: Environmental Protection Agency, Seattle, WA. Region X.
Report No.: MMS/WQR-8213
Aug 82 130p
See also PB84-103753 and PB84-103779.
Also available in set of 4 reports PC E99, PB84-103738.
Languages: English
NTIS Prices: PC A07/MF A01 Journal Announcement: GRAI8401
Country of Publication: United States
Contract No.: EPA-P-000233-01

As part of Metro's Household Hazardous Waste Disposal Project, a pilot study was conducted in the Seattle area to determine public awareness of and attitudes about the issues of toxic/hazardous substances in the home and their safe disposal. Metro also wished to determine actual response to a collection program in a brief, neighborhood test. An initial telephone survey was conducted in the Seattle metropolitan area and the test neighborhood. A three-week collection project for pesticides, solvents, and used motor oil was run in the 4000 household neighborhood in February, 1982, followed by a telephone survey to help interpret project results. This report describes the preparation, procedures, and findings of the surveys and pilot study. Recommendations have been developed for a regional education and collection system for household hazardous wastes in the Seattle/King County area.
[NTIS]

INTERNATIONAL ASPECTS

0152184 86-043052
REFUSE DERIVED FUEL IN THE NETHERLANDS,
BOESMANS B.
NETHERLANDS ORG APPLIED SCIENTIFIC RESEARCH,
CONSERVATION & RECYCLING, 1986, V9, N1, P23(6)

JOURNAL ARTICLE THE DEVELOPMENT OF REFUSE-DERIVED FUEL PRODUCTION AND COMBUSTION TECHNOLOGIES IN THE NETHERLANDS LAGS BEHIND THAT CURRENTLY OBTAINING IN THE U.K. AND U.S. DURING 1983-84, HOWEVER, FOUR REFUSE-DERIVED FUEL PRODUCTION INSTALLATIONS BECAME OPERATIONAL. RECYCLING AND REPROCESSING TECHNIQUES EMPLOYED ARE DESCRIBED. EXPERIENCE GAINED WITH EXPERIMENTAL FLUIDIZED BED INCINERATORS IS REVIEWED, AND PLANS ARE OUTLINED FOR EXPERIMENTS WITH INDUSTRIAL GRID BOILERS.
[EGY]

0155113 *87-005070
RESOURCE RECOVERY,
CAROLAN MICHAEL J. ; PHILLIPS W. JOHN ; SHIMELL PAMELA B. ; JOHNSON BRUCE
GSF ENERGY INC, CA,
WORLD WASTES, JUN 86, V29, N6, P24(6)

JOURNAL ARTICLE FALLING ENERGY PRICES, ENVIRONMENTAL CONCERNS, AND FEWER GOVERNMENT INCENTIVES HAVE TAKEN THEIR TOLL ON THE INFANT LANDFILL GAS RECOVERY INDUSTRY. THIS SECTOR IS FEELING MORE AND MORE PRESSURE TO BE COMPETITIVE WITH ALTERNATIVE FUELS IN THE FACE OF RISING OPERATING EXPENSES. OTHER RESOURCE RECOVERY PROJECTS ARE BEING VIEWED AS PRIME BUSINESS VENTURES BY ENTREPRENEURS. THE VARIOUS ROLES PLAYED BY LOCAL DEVELOPERS IN DEMONSTRATING THE ECONOMIC FEASIBILITY OF WASTE-TO-ENERGY AND WASTE REPROCESSING SCHEMES ARE OUTLINED. OPTIONS BEING CONSIDERED FOR SOLID WASTE ENERGY CONVERSION AND RECYCLING IN THE U.K. AND SWEDEN ARE SUMMARIZED. TWO LARGE PILOT PROGRAMS, ONE INVOLVING SEMI-AUTOMATED REFUSE COLLECTION AND THE OTHER INVOLVING DOOR-TO-DOOR COLLECTION OF HAZARDOUS HOUSEHOLD WASTES, ARE PLANNED FOR IMPLEMENTATION IN LOS ANGELES, CA.
[EGY]

0152052 *86-040902
BIOGAS PRODUCTION AND RECOVERY FROM HOUSEHOLD WASTE LANDFILLS,
MOUTON C. ; BECKELYNCK J. ; ALBAGNAC G. ; DUBOURGUIER H.-C.
SOCIETE LYONNAISE EAUX ET L'ECLAIRAGE, FRANCE,
TECHNIQUES SCIENCES MUNICIPALES, SEP 85, V80, N9, P391(14)

JOURNAL ARTICLE THE KINETICS OF BIOGAS FORMATION IN MUNICIPAL LANDFILLS ARE BEING RESEARCHED IN FRANCE. A BIOGAS COMPOSITION COMPRISED OF 55% METHANE WAS DOCUMENTED IN A LANDFILL A FEW MONTHS AFTER WASTE EMPLACEMENT. EQUIPMENT AND SYSTEMS HAVE BEEN FIELD TESTED FOR METHANE PRODUCTION AND RECOVERY. THE POTENTIAL UTILIZATION OF SUCH BIOGAS IN FRANCE IS POSTULATED. (IN FRENCH)
[EGY]

0150175 85-024403
COMBUSTION OF REFUSE-DERIVED FUELS IN A SPECIALLY DEVELOPED HIGH-INTENSITY THERMAL DEVICE,
AROSIO S. ; CASSITTO L. G.; CRESCENTI A.; SOTGIA G.
MILAN POLYTECHNIC, ITALY,
RESOURCES & CONSERVATION, MAR 85, V11, N3-4, P241(13)
RESEARCH ARTICLE

THE POSSIBILITY OF UTILIZING REFUSE-DERIVED FUELS OR INDUSTRIAL BY-PRODUCTS IN SMALL TO MEDIUM COMBUSTION UNITS IS INVESTIGATED. A SPECIALLY DESIGNED HIGH-INTENSITY COMBUSTION CHAMBER IS CONNECTED TO A REFRACTORY-LINED FIRE-TUBE BOILER. REFUSE-DERIVED FUEL IS INJECTED TANGENTIALLY INTO THE COMBUSTOR WHILE SUPPORTING FUEL OIL ENTERS ALONG THE AXIS OF THE DEVICE. SOLID WASTE FUEL FROM MILAN, ITALY, WAS OF LOW CALORIFIC VALUE; IT WAS DIFFICULT TO OBTAIN A COMBUSTOR TEMPERATURE OVER 1100 C. A TEMPERATURE OF 1200 C WAS EASILY REACHED WITH FUEL FROM ROME. (3 DIAGRAMS, 6 GRAPHS, 10 REFERENCES, 4 TABLES,)
[EGY]

85-08173

Adaptation and testing of a new system of gasification for household waste

Ferranti, M.; Ferrero, G.L. (eds.); Molle, J.F.; Gaudemard, S.
CEMAGREF, Parc de Tourvoie F-92160, Antony, France
Information Symposium on Sorting of Household Waste and Thermal Treatment of Waste Luxembourg (Luxembourg) 25-27 Sep 1984
SORTING OF HOUSEHOLD WASTE AND THERMAL TREATMENT OF WASTE pp. 265-282, Publ.Yr: 1985
ELSEVIER SCIENCE PUBLISHING COMPANY, 52 VANDERBILT AVE., NEW YORK, NY 10017 (USA)
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

15 million tonnes of municipal solid wastes are to be eliminated by year in France. Three treatment technologies are usually used: sanitary landfill; composting; incineration. The results of a survey carried out by CEMAGREF in grinding and composting plants indicate that the large quantity of refuses to be processed have a better calorific value than the raw municipal waste. It is interesting to transform these wastes into charcoal. The charcoal remaining is about 40% to 50% of the initial mass and 60% of the initial energy. CEMAGREF builds and tests a suspended bed caronizator using these refuses with a view to transform them into charcoal.
[POL]

85-08195

Investigation into the combustion of household waste materials in a fluidized bed combustor

Ferranti, M.; Ferrero, G.L. (eds.); Kiers, I.A.
Netherlands Organ. Appl. Sci. Res., Div. Technol. Society, Netherlands
Information Symposium on Sorting of Household Waste and Thermal Treatment of Waste Luxembourg (Luxembourg) 25-27 Sep 1984
SORTING OF HOUSEHOLD WASTE AND THERMAL TREATMENT OF WASTE pp. 427-429, Publ.Yr: 1985
ELSEVIER SCIENCE PUBLISHING COMPANY, 52 VANDERBILT AVE., NEW YORK, NY 10017 (USA)
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

In the fluidized bed furnace at TNO Apeldoorn, an investigation has been carried out into the combustion of five different fractions of household waste. The first phase of the program is to establish the optimum conditions for the combustion process of these fractions. The second phase consists of an extensive measurement program at these optimum conditions. In that phase special attention will be given to the emissions of PAH's, PCDD's; PCDF's and PCB's. For a few fractions the temperature in the freeboard will be increased to about 1300 degree C. The experimental part of the investigation is finished. The samples are being analyzed at this moment.
[POL]

85-08142

Sorting of household waste and thermal treatment of waste

Ferranti, M.P.; Ferrero, G.L. (eds.)
Information Symposium on Sorting of Household Waste and Thermal Treatment of Waste Luxembourg (Luxembourg) 25-27 Sep 1984
Publ.Yr: 1985
ELSEVIER SCIENCE PUBLISHING COMPANY, NEW YORK, NY (USA)
Price: $45.00.
Languages: ENGLISH

The principal aim was to present and discuss the results of the CEC R&D program on recycling of urban and industrial waste and of the energy demonstration program. The priorities in waste policy are implicit in the title of the symposium: the first goal is sorting and recycling of materials whenever possible; the second priority is for thermal treatment of any materials unsuitable for recovery.
[POL]

85-08148

Low-technology sorting of presorted household waste

Ferranti, M.; Ferrero, G.L. (eds.); Mortensen, H.
Gendan Ltd., Copenhagen, Denmark
Information Symposium on Sorting of Household Waste and Thermal Treatment of Waste Luxembourg (Luxembourg) 25-27 Sep 1984
SORTING OF HOUSEHOLD WASTE AND THERMAL TREATMENT OF WASTE pp. 62-71,
Publ.Yr: 1985
ELSEVIER SCIENCE PUBLISHING COMPANY, 52 VANDERBILT AVE., NEW YORK, NY 10017 (USA)
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Recognizing that for the recycling industry to be really interested in recycled materials these materials have to be collected at source, the purpose of this R&D project is to find the recycling system which: yields the largest amount of recycled materials of an acceptable quality to industry; the smallest degree of participation from the wasteproducer (in order to increase participation); and the highest possible utilization of the existing waste handling system (- to keep costs down). The project was limited to household waste, and as households in single family housing were and are subject to a lot of studies the author focused on multistorey dwellings. The study is still in progress and will be finished by the end of 1984.
[POL]

85-08209

Valorisation of RDF selected from solid household wastes in the province of Luxembourg

Ferranti, M.; Ferrero, G.L. (eds.); Chaplier, J.
Dep. Solid Wastes, Idelux, 8 Ave. Nothomb, B-6700 Arlon, Belgium
Information Symposium on Sorting of Household Waste and Thermal Treatment of Waste Luxembourg (Luxembourg) 25-27 Sep 1984
SORTING OF HOUSEHOLD WASTE AND THERMAL TREATMENT OF WASTE pp. 462-463, Publ.Yr: 1985
ELSEVIER SCIENCE PUBLISHING COMPANY, 52 VANDERBILT AVE., NEW YORK, NY 10017 (USA)
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Four steps have been taken to achieve the optimal recycling solution: 1) study of the physical properties of RDF and conditioning methods; 2) combustion system design; 3) search for steam consumers; and 4) economic evaluation.
[POL]

85-08207

Pilot plant for household wastes sorting

Ferranti, M.; Ferrero, G.L. (eds.); Skordilis, A.
Minist. Phys. Plann., Hous. and Environ., 147 Patission St., Athens, Greece
Information Symposium on Sorting of Household Waste and Thermal Treatment of Waste Luxembourg (Luxembourg) 25-27 Sep 1984
SORTING OF HOUSEHOLD WASTE AND THERMAL TREATMENT OF WASTE pp. 457-458, Publ.Yr: 1985
ELSEVIER SCIENCE PUBLISHING COMPANY, 52 VANDERBILT AVE., NEW YORK, NY 10017 (USA)
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

The project in question intends to: 1) examine all the technical possibilities of household wastes recovery; 2) investigate market projects for the recovered materials; 3) investigate the technological and financial possibilities of their use in a variety of industrial and agricultural sectors; 4) decrease of the volume regarding the disposal of wastes, the pilot plant will be constructed in the landfill site of Liossia. The sorting will be done in three lines. The first line, involves mechanical sorting in a zig-zag air classifier. In the second line, there will be hand sorting for the paper and plastics. The organic matter will be transported to compost.
[POL]

84027559 V12N5

Solid waste management realities in developing countries

Holmes, J.R.
Grandmet Waste Serv. Ltd., Aylesbury, Bucks., UK
Environment and Safety IVth International Conference 8415007 London, UK 27-29 Mar 84
Sponsor information not available
1984, Labmate Ltd., Newgate, Sandpit Lane, St. Albans, Herts AL4 0BS, UK,
Papers may be ordered individually by paper number or as a complete set
Paper No. 4
Languages: ENGLISH
[CPI]

IV.APPENDIX A

STATE PROGRAMS SUPPORTING WASTE MINIMIZATION

Alabama

Center for Urban Affairs
Ullman, Room 136
University of Alabama at Birmingham
1200 7th Avenue, South
Birmingham, AL 35294
(205) 934-3500

Hazardous Materials
Management and Resource Recovery
Program (HAMMARR)
University of Alabama
P.O. Box 6373
Tuscaloosa, AL 35487-6373
(205) 348-8401

Project ROSE
(Recycled Oil Saves Energy)
University of Alabama
P.O. Box 6373
Tuscaloosa, AL 35487-6373
(205) 348-4878

Alaska

Alaska Health Project
Waste Reduction Assisstance Program
417 West Eight Avenue
Anchorage, AK 99501
(907) 276-2864

Arkansas

Arkansas Industrial Development
Commission - Energy Division
One State Capitol Mall
Little Rock, AR 72201
(501) 371-1370

California

California Pollution Control
Financing Authority
915 Capitol Mall, Room 280
Sacramento, CA 95814
(916) 445-9597

Alternative Technology Section
Toxic Substances Control Division
California Department of Health
Services
714/744 P Street
Sacramento, CA 95814
(916) 322-5347

Connecticut

Connecticut Hazardous Waste
Management Service
Suite 360
900 Asylum Avenue
Hartford, CT 06105
(203) 244-2007

State of Connecticut
Department of Economic Development
210 Washington Street
Hartford, CT 06106
(203) 566-7196

Florida

Center or Biomedical and
Technicological Research and
Hazardous Waste Management
Florida State University
361 Bellamy Building
Tallahassee, FL 32306-4016
(904) 644-5524

Georgia

Hazardous Waste On-site
Consultation Program
Georgia Institute of Technology
Georgia Technical Research Institute
Environmental Health and
Safety Division
O'Keefe Building Room 042
Atlanta, GA 30332
(404) 894-3806

Environmental Protection Division
Georgia Department of Natural Resources
Floyd Towers East, Suite 1154
205 Butler Street
Atlanta, GA 30334
(404) 656-2833

Illinois

Hazardous Waste Research and Information Center
1808 Woodfield Drive
Savoy, IL 61874
(217) 333-8940

Industrial Waste Elimination Research Center
Environmental Engineering
Illinois Institute Technology
3200 South Federal Street
Chicago, IL 60616
(312) 567-3535

Indiana

Center for Public Policy Administration
Young Graduate House, Room 120
Purdue University
West Lafayette, IN 47907
(317) 494-5036

Indiana Department of Environmental Management
Office of Technical Assistance
P.O. Box 6015
105 South Meridian Street
Indianapolis, IN 46206-6015
(317) 232-8172

Iowa

Iowa Department of Natural Resources
Attn: Air Quality and Solid Waste Protection Bureau
Wallace State Office Building
900 East Grand Avenue
Des Moines, IA 50319-0034
(515) 281-8690

Center for Industrial Research
and Service
205 Engineering Anne
Iowa State University
Ames, IA 50011
(515) 294-4721

Kansas

Bureau of Waste Management
Department of Health and
Environment
Forbes Field, Building 321
Topeka, KS 66620
(913) 862-9360

Kentucky

Division of Waste Management
Natural Resources Environmental
Protection Cabinet
18 Reilly Road
Frankfort, KY 40601
(502) 564-6716

Louisiana

Office of Solid and Hazardous Waste
Louisiana Department of Environmental
Quality
P.O. Box 44307-4307
Baton Rouge, LA 70804
(504) 342-4685

Maryland

Maryland Hazardous Waste
Facilities Siting Board
60 West Street, Suite 200
Annapolis, MD 21401
(301) 269-3432

Maryland Environmental Service
2020 Industrial Drive
Annapolis, MD 21401
(301) 269-329
(800) 492-9188 (In Maryland)

Massachusetts

Office of Safe Waste Management
Department of Environmental
Management
100 Cambridge Street,Room 1905
Boston, MA 02202
(617) 727-3260

Source Reduction Program
Bureau of Solid Waste Disposal
Massachusetts Department of
Environmental Quality Engineering
1 Winter Street, 4th Floor
Boston, MA 02108
(617) 292-5982

Minnesota

Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
520 Lafayette Road
St. Paul, MN 55155
(612) 296-6300

Minnesota Technical Assistance Program
W-140 Boynton Health Service
University of Minnesota
Minneapolis, MN 55455
(612) 625-9677
(800) 247-0015 (In Minnesota)

Minnesota Waste Management Board
123 Thorson Center
7323 Fifty-Eighth Avenue
Crystal, MN 55428
(612) 536-0816

Missouri

State Environment Improvement and
Energy Resources Authority
P.O. Box 744
Jefferson City, MO 65102
(314) 751-4919

New Jersey

New Jersey Hazardous Waste Facilities
Siting Commission
Room 614
28 West State Street
Trenton, NJ 08608
(609) 292-1459 or 292-1026

Bureau of Hazardous Waste
Regulation and Classification
New Jersey Department Environmental Protection
401 East State Street
Trenton, NJ 08625
(609) 633-0737

Office of Science and Research
New Jersey Department of
Environmental Protection
40 East State Street
Trenton, NJ 08625
(609) 633-1378

New York

New York State Environmental Facilities
Corporation
50 Wolf Road
Albany, NY 12205
(518) 457-4139

Division of Solid and Hazardous Waste
New York Department of
Environmental Conservation
50 Wolf Drive
Albany, NY 12233
(518) 457-3273

North Carolina

Pollution Prevention Pays Program
Department of Natural
Resources and Community Development
P.O. Box 27611
Raleigh, NC 27611
(919) 733-7015

Technical Assistance Unit
Solid and Hazardous Waste
Management Branch
North Carolina Department of
Human Resources
P.O. Box 2091
Raleigh, N.C. 27602
(919) 733-2178

Governor's Waste Management Board
325 North Salisbury Street
Raleigh, NC 27611
(919) 733-9020

Ohio

Division of Solid Hazardous Waste
Management
Ohio Environmental Protection Agency
P.O. Box 1049
1800 WaterMark Drive
Columbus, OH 43266-0149
(614) 481-7200

Ohio Technology Transfer
Organizaion
Suite 200
65 East State Street
Columbus, OH 43266-0330
(614) 466-4286

Oklahoma

Industrial Waste Elimination Program
Oklahoma State Department of Health
P.O. Box 53551
Oklahoma City, OK 73152
(405) 271-7353

Oklahoma Department of Pollution
Control
P.O. Box 53504
Oklahoma City, OK 73152

Oregon

Oregon Hazardous Waste Reduction Program
Department of Environmental Quality
811 Southwest Sixth Avenue
Portland, OR 97204
(503) 229-5913

Pennsylvania

Pennsylvania Technical Assistance Program
(PENNTAP)
501 J. Orvis Keller Building
University Park, PA 16802
(814) 865-1914

Pennsylvania Department of Environmental
Resources
P.O. Box 2063
Harrisburg, PA 17120
(717) 787-6239

Center for Hazardous Material Research
320 William Pitt Way
Pittsburgh, PA 15238
(412) 826-5320

Rhode Island

Ocean State Cleanup and Recycling
Program
Rhode Island Department of
Environmental Management
9 Hayes Street
Providence, RI 02908-5003
(401) 277-3434
(800) 253-2674 (in RI)

Center for Environmental Studies
Brown University
P.O. Box 1943
135 Angell Street
Providence R.I. 02912
(401) 863-3449

Tennessee

Tennessee Center for Industrial
Services
Suite 401
226 Capitol Boulevard Bldg.
University of Tennessee
Nashville, TN 37219-1804
(615) 242-2456

Virginia
Virginia Department of Waste Management
Monroe Building, 11th Floor
101 North 14th Street
Richmond, VA 23219
(804) 225-2667
(800) 552-2075 (In Virginia)

Washington
Hazardous Waste Section
Washington Department of Ecology
Mail Stop PV-11
Olympia, WA 98504-8711
(206) 459-6000

Wisconsin
Wisconsin Department of
Natural Resources
Bureau of Solid Waste Management
Box 7921
Madison, WI 53707
(608) 266-2699

Wyoming
Wyoming Department of
Environmental Quality
Solid Waste Management Program
Herschler Building, 4th Floor
West Wing
122 West 25th Street
Cheyenne, WY 82002
(307) 777-7752

APPENDIX B

EPA REGIONAL WASTE MINIMIZATION CONTACTS

Linda Murphy	Region I JFK Federal Building Boston, MA 02203	(617) 223-5655 8-223-5655 Mail Code : HRL
Lenord Naphtali	Region II 26 Federal Plaza New York, NY 10278	(212) 264-2377 8-264-2377 Mail Code : 2AWMHWF
Dave Friedman	Region III 841 Chestnut Street Philadelphia, PA 19107	(215) 597-2863 8-597-2863 Mail Code : 3HW34
Nancy Grundahl	Region III 841 Chestnut Street Philadelphia, PA 19107	(215) 597-7188 8-597-7188 Mail Code : 3HW34
Pete Bentley	Region III 841 Chestnut Street Philadelphia, PA 19107	(215) 597-6728 8-597-6728 Mail Code : 3PA00
Otis Johnson (KY, TN) Thornell Cheeks (NC, SC) Don Webster (GA, FL) Cheryl Brown (AL, MS)	Region IV 345 Cortland Street, NE Atlanta, GA 30365	(404) 347-3016 8-257-3016 Mail Code : RMB-2
Russ Barnett	Region IV 345 Cortland Street, NE Atlanta, GA 30365	(404) 347-7109 8-257-7109 Mail Code : Office of Policy and Management
Lili Herskovits	Region V 230 South Dearborn Street Chicago, IL 60604	(312) 886-1477 8-886-1477 Mail Code : 5HS
Thomas Clark	Region VI 1445 Ross Avenue Dallas, TX 75202	(214) 655-6750 8-255-6750 Mail Code : 6H-HA

Dan Wheeler	Region VII 726 Minnesota Avenue Kansas City, KS 66201	(913) 236-2852 8-757-2852 Mail Code : State Programs
Randy Lamdin	Region VIII 999 18th Street Denver, CO 80202-2405	(303) 293-1705 8-564-1705 Mail Code : 8HWM/WM
Kelly Allan	Region IX 215 Fremont Street San Francisco, CA 94105	(415) 974-8141 8-454-8141 Mail Code : T-2-1
Bill Steyer	Region X 1200 Sixth Avenue Seattle, WA 98101	(206) 442-2782 8-399-2782 Mail Code : HW112

IV.APPENDIX C

ASSOCIATIONS

02509
ALUMINUM ASSOCIATION (Metal) (AA)
818 Connecticut Ave., N.W., Washington, DC 20006
(202)862-5100
John C. Bard Pres.

Founded: 1933. Members: 88. Staff: 55. Producers of aluminum and manufacturers of semi-fabricated aluminum products. Maintains library of 3000 volumes on aluminum technology and the aluminum industry. Divisions: Aluminum Bar, Rod and Wire; Aluminum Electrical Conductor; Aluminum Extruded Products; Aluminum Foil; Aluminum Foundry; Aluminum Sheet and Plate; Forgings; Master Alloy; Pigments and Powders; Recycling. Publications: (1) Aluminum Situation, monthly; (2) World Aluminum Abstracts, monthly; (3) Aluminum Statistical Review, annual; (4) Aluminum Standards and Data, biennial; also publishes free catalog listing all publications, reprints, and audiovisual material. Convention/Meeting: semiannual - always May, White Sulphur Springs, WV and October, Washington, DC.
[EA]

03690
ALUMINUM RECYCLING ASSOCIATION (Waste) (ARA)
900 17th St., N.W., Suite 504, Washington, DC 20006
(202)785-0550
Richard M. Cooperman Exec.Dir.

Founded: 1929. Members: 30. Producers of aluminum specification alloys from aluminum scrap. Committees: Government Liaison; Product and Marketing; Safety, Security and Industry Relations; Scrap; Statistical; Technical. Publications: Quarterly Reports on Industry Shipments; also publishes brochure. Formerly: (1953) Aluminum Research Institute; Aluminum Smelters Research Institute; (1971) Aluminum Smelting and Recycling Institute. Convention/Meeting: annual.
[EA]

02782
ASPHALT RECYCLING AND RECLAIMING ASSOCIATION (Paving) (ARRA)
1133 15th St., N.W., Washington, DC 20005
(202)429-9440
Michael R. Krissoff Exec.Dir.

Founded: 1976. Members: 147. Staff: 7. Contractors and engineers engaged or previously engaged in the reworking of asphalt (82); contractors employed in connection with the services of regular members and suppliers of material or equipment to members (26); governmental representatives, architects, and interested persons dealing with asphalt recycling (32); honorary members (7). Objective is to promote asphalt recycling. Committees: Cold Planing; Cold Recycling; Hot Recycling; Surface Recycling. Publications: (1) Newsletter, bimonthly; (2) Membership Directory, annual; also publishes specifications and guidelines. Convention/Meeting: annual - 1985 (next) Toronto, ON, Canada; 1986 February, Las Vegas, NV and undecided.
[EA]

03691
AUTOMOTIVE DISMANTLERS AND RECYCLERS ASSOCIATION (Waste) (ADRA)
1133 15th St., N.W., Washington, DC 20005
(202)429-9440
Russell F. McKinnon Exec.V.Pres.

Founded: 1943. Members: 5500. Staff: 12. State and Local Chapters: 45. Firms selling used auto and truck parts, motorcycles, buses, and farm and construction equipment, retail and wholesale; operators of long line (telephone) circuits; firms selling equipment and services to the industry. Seeks to improve business practices and operating techniques through exchange of information via publications and meetings. Cooperates with public and private agencies in beautification efforts and developing solutions to the abandoned car and auto theft problems. Conducts seminar and trade show. Maintains speakers bureau, college scholarship foundation for children of employees, and educational foundation; conducts annual beautification contest for members. Maintains 15 committees. Publications: (1) Newsletter, monthly; (2) Dismantlers Digest, bimonthly; (3) Roster of Members, annual; (4) Industry Survey, biennial; also publishes technical manuals. Formerly: (1955) National Auto Wreckers Association; (1972) National Auto and Truck Wreckers Association; (1977) Association of Auto and Truck Recyclers; (1982) Automotive Dismantlers and Recyclers of America. Convention/Meeting: annual trade show - 1985 Oct. 23-26, Nashville, TN; 1986 Oct. 29-Nov. 3, Anaheim, CA; 1987 October, Orlando, FL; 1988 October, Palm Springs, CA.
[EA]

10711
BICYCLE NETWORK (Transportation) (BN)
P.O. Box 8194, Philadelphia, PA 19101
(215)222-1253
John Dowlin Contact

Founded: 1976. Members: 100. Advocates the bicycle as a healthful, low-cost, and energy efficient means of transportation. Seeks to demonstrate the practical importance of bicycle transit and pedal technology worldwide. Works for the "velorution" on a global basis. (According to the network, "velorution" is the French-Canadian word for "bicycle revolution.") Conducts seminars, workshops, and on-site visits; disseminates information. Addresses issues such as: safe and practical cycling facilities (parking, commuting, and transport); cyclist education; bicycle integration with public transportation; and the role of the bicycle in developing countries. Publications: (1) Network News: The Bicycle Network's Clipping Service, quarterly; (2) Cycle and Recycle (wall calendar), 3/year. Convention/Meeting: annual - in conjunction with International Cycle Show.
[EA]

00436
BUMPER RECYCLING ASSOCIATION OF NORTH AMERICA (Automotive) (BRANA)
1133 15th St., N.W., Washington, DC 20005
(202)429-9440
David W. Barrack Exec.Dir.

Founded: 1969. Members: 134. Staff: 5. Business firms engaged in the straightening, repolishing, and replating of automobile parts; proprietorships and corporations involved in the sale of supplies, equipment, and services to bumper recyclers are associate members. Seeks to upgrade the recycling of bumpers throughout North America. Sponsors meetings and semiannual seminars on such topics as new governmental regulations, techniques, and products. Conducts research and surveys directly related to improving the industry. Publications: (1) Newsletter, bimonthly; (2) Membership Directory, annual. Formerly: (1972) Bumper Reconditioning Association of North America. Convention/Meeting: semiannual - 1985 (next) Aug. 12-16, Chicago, IL; 1986 February/March, Orlando, FL and August, Toronto, ON, Canada.
[EA]

05743
COMMUNITY ENVIRONMENTAL COUNCIL (Environmental Quality) (CEC)
930 Miramonte Dr., Santa Barbara, CA 93109
(805)962-2210
Paul Relis Dir.

Founded: 1970. Members: 400. Staff: 25. Individuals and environmental organizations. Prime objective is environmental education and sponsorship of public service projects. Current projects are: two recycling centers; community gardens; Mesa Project; a prototype residential complex emphasizing appropriate technologies and offering agriculture training courses and workshops on solar energy. Maintains 2500 volume research library on all environmental subjects with an emphasis on self-help. Computerized Services: Data bases on recycling, water conservation, and urban self-reliance. Publications: (1) Members Report, monthly; (2) Gildea Resource Center Newsletter; quarterly; also publishes special books, pamphlets, and reports on solar energy, bio-intensive horticulture, and energy conservation.
[EA]

05606
ECOLOGY ACTION EDUCATIONAL INSTITUTE (EAEI)
Box 3895, Modesto, CA 95352
(209)538-1689
James K. Knox Dir.

Founded: 1969. Members: 400. Staff: 10. Objective is to work for environmental preservation and natural resource conservation. Primary activity is operation of a recycling center where recyclables are purchased from the public. Serves as environmental advocacy and information center. Conducts limited ecological research and elementary and secondary school educational programs; sponsors workshops and speakers. Publications: Newsletter, monthly. Convention/Meeting: annual - always October.
[EA]

05607
ECOLOGY CENTER (EC)
1403 Addison St., Berkeley, CA 94702
(415)548-2220
Richard Evans Pres.

Founded: 1969. Members: 800. Staff: 4. Dedicated to informing the public on environmental problems and ecologically sound alternatives. Conducts educational and informational programs and recycling program for newspapers, glass, and metal containers. Maintains library, bookstore and information service dealing with such subjects as insect control, recycling, legislation and environmental groups. Publications: Newsletter, monthly; also publishes reprints, booklets, and fact sheets. Convention/Meeting: annual - always January, Berkeley, CA.
[EA]

05751
ENVIRONIC FOUNDATION INTERNATIONAL (Environmental Quality) (EFI)
P.O. Box 1088, Notre Dame, IN 46556
(219)233-3357
Leroy S. Troyer Pres.

Founded: 1970. Trustees 14. Individuals from U.S., Canada, England, and Japan. Purpose is to develop educational programs and conduct research and practical demonstrations in various realms of environmental comprehension and design, architecture, urban ecology, regional planning, landscape planning, and subterranean and submarine accommodation. Believes that instruction in person-place interrelationships must become basic educational routine, preceding the conventional subjects, and continuing as a consistent motivation in behavior throughout the active life-span.

Explores subjects including: assessment of personal creative responses measured throughout the twenty-four hours of the clock (neodic time); reduction of conflicts in land-uses due to limitations of surface areas available by the design of subterranean accommodation (geotecture) and by the design of littoral accommodation, above, on, or below water surfaces (thalatecture); protection and conservation of the exceptional landscapes and habitats, and the restoration of ravaged industrial areas for self-sustaining purposes (rehabilitation); the recycling of all materials of human use and their positive application toward the improvement of the environment (poietic encyclement); the particular dilemma of land-water margins (littoral design); the kinetics and aesthetics of highway design (visualization); the conflicting forces arising from transportation systems, their siting, environic penalties, and economic advantages (airport locations); the adaption of historic and other structures of quality to ensure their continuing cultural influence upon the community (enarmotecture). Conducts seminars, lectures, and inspections. Maintains a library of 5000 volumes and numerous files. Bestows Environic Foundation Fellowships. Contributes to conferences and exhibitions. Convention/Meeting: annual.
[EA]

05753
ENVIRONMENTAL ACTION COALITION (Environmental Quality) (EAC)
417 Lafayette St., New York, NY 10003
(212)677-1601
Nancy A. Wolf Exec.Dir.

Founded: 1970. Members: 2000. Staff: 10. Purposes are: to educate the public on the nature and scope of major environmental problems; to provide a resource center to help concerned citizens develop positive solutions to these problems; and to motivate the public to become involved in these solutions. Current activities focus on implementation of source-separation recycling projects, monitoring resource recovery installations, urban greening programs, and development of environmental education materials for both children and adults. Serves as a clearinghouse for environmental services in the New York City region and other urban areas nationwide.

Advises and assists groups in organizing and operating recycling collection sites. Maintains environmental education program which develops curriculum units, produces films and conducts teacher workshops. Operates 2000 volume library of vertical files, books, reports, and periodicals. Produces films. Publications: Cycle (membership newsletter), quarterly; also publishes Eco-News (newsletter for children); Eco-Facts (fact sheets on environmental problems affecting New York City); Waste Paper (simplified data for laypersons on waste management); Manual for Organizing and Operating a Community Recycling Center; and recycling directory for New York.
[EA]

04716
ENVIRONMENTAL LAW INSTITUTE (ELI)
1346 Connecticut Ave., N.W., Suite 600, Washington, DC 20036
(202)452-9600
J. William Futrell Pres.

Founded: 1970. Staff: 40. Launched by the Public Law Education Institute and the Conservation Foundation (see separate entries). Purposes are: to conduct and sponsor research on environmental law and policy; to maintain a clearinghouse for information regarding environmental law; and to engage in related educational activities, which include conferences, seminar programs, workshops and extensive publications. Has conducted environmental law courses with Environmental Law Societies of Harvard, Boston University and George Washington law schools; has cosponsored joint environmental law conferences with the American Bar Association, American Law Institute (see separate entries), and the Smithsonian Institution; has sponsored two-month summer internship programs for law students. Maintains library of 20,000 volumes of legal and environmental material. Research programs include: Air and Water; Land Use; Resources; and Toxic Substances. Divisions: Education; Publications. Publications: (1) Environmental Forum, monthly; (2) Environmental Law Reporter, monthly; (3) Associates Newsletter, bimonthly; (4) National Wetlands Newsletter, bimonthly; (5) Directory of State Environment Agencies, biennial; has also published reports and books on air and water pollution, energy, land use, resource conservation and recycling and toxic substances, and brochures. Affiliated with: National Wetlands Technical Council. Convention/Meeting: annual conference.
[EA]

01081

GLASS PACKAGING INSTITUTE (Container) (GPI)
6845 Elm St., Suite 209, McLean, VA 22101
(703)790-0800
William W. Sadd Pres.-Gen.Mgr.

Founded: 1945. Members: 50. Staff: 7. Promotes the manufacture, use and recycling of glass containers and closures. Develops and evaluates testing procedures and equipment; conducts experimental activities in glass packaging; develops designs and specifications for glass containers and finishes; conducts advertising and promotional campaigns for the generic products; develops and maintains constructive relationships with various publics and governments at the local, regional, state, and national levels. Committees: Closures; Government Relations; Marketing; Technical. Formerly: (1976) Glass Container Manufacturers Institute. Convention/Meeting: semiannual - 1985 (next) Sept. 22-25, White Sulphur Springs, WV.
[EA]

04718

HARVARD ENVIRONMENTAL LAW SOCIETY (ELS)
Harvard Law School, Cambridge, MA 02138
(617)495-3125
Edward McCaffery Co-Chair

Founded: 1945. Members: 60. Harvard law students united to protect the environment through legal research and educational programs. Conducts research projects on nuclear planning power, toxic wastes, land-use planning, and wilderness preservation. Activities include advice, research, assistance in litigation, the drafting of legislation, promoting placement in environmental law, sponsoring speakers, symposia, lobbying, outings, and paper recycling. Maintains 300 volume library on environmental law. Sponsors moot court environmental law alternative.
[EA]

06488

HAZARDOUS WASTE TREATMENT COUNCIL (HWTC)

1919 Pennsylvania Ave., N.W., Suite 300, Washington, DC 20006
(202)296-0778
Richard C. Fortuna Exec.Dir.

Founded: 1982. Members: 35. Staff: 2. Firms dedicated to the use of high technology treatment in the management of hazardous wastes and to the restricted use of land disposal facilities in the interests of protecting human health and the environment. Advocates minimization of hazardous wastes and the use of alternative technologies in their treatment, including chemical and biological treatments, fixation, neutralization, reclamation, recycling, and thermal treatments such as incineration. Encourages land disposal prohibitions and the development and enforcement of regulations. Promotes reductions in the volume of hazardous waste generated annually and expansion of EPA hazardous waste list. Advocates use of treatment technology as a more cost-effective approach to Superfund site cleanups. Works with state, national, and international officials and firms to assist in development of programs that utilize treatment and minimize land disposal. Provides technical assistance to members; sponsors special studies; participates in federal litigation and regulatory development. Maintains library of materials on new technologies; operates speakers bureau. Telecommunications Services: Telex, 89414. Convention/Meeting: 6-8/year.
[EA]

05030

INTERSTATE MINING COMPACT COMMISSION (IMCC)

1364 Devonport Dr., Lexington, KY 40504
(606)253-1576
Kenes C. Bowling Exec.Dir.

Founded: 1971. Members: 17. Staff: 3. States engaged in surface mining. Purposes are to: study and recommend techniques for the protection and restoration of land, water, and other resources affected by mining; assist in the reduction, elimination, or counteracting of pollution or deterioration of natural resources; encourage programs of member states which will achieve comparable results in protecting and improving the usefulness of natural resources; maintain an efficient and productive mining industry. Compiles statistics; disseminates studies and reports on surface mining, reclamation techniques, and legislative developments affecting member states. Committees: Abandoned Mine Lands; Legal; Non-Fuel Mineral Resources; Regulatory Practices; Research; Training. Publications: (1) The Compact (newsletter), quarterly; (2) Annual Report; (3) Directory, annual. Convention/Meeting: annual conference - 1985 Sept. 24-27, Asheville, NC.
[EA]

05771
KEEP AMERICA BEAUTIFUL (Environmental Quality) (KAB)
99 Park Ave., New York, NY 10016
(212)682-4564
Roger W. Powers Pres.

Founded: 1953. Members: 100. Staff: 19. State Groups: 20. Local Groups: 353. Public service organization fostering daily cooperation between government, business, and the public to improve the physical quality of life. Sponsors the Clean Community System, a comprehensive behavioral approach to improved waste handling by the entire community. Sponsors national awards programs and Keep America Beautiful Week; prints posters and litter bags. Departments: Communications and Program Development; Field Services. Publications: (1) CCS Bulletin, quarterly; (2) Review, annual; also publishes program schematics, guides, annotated bibliography, recycling publications, transcripts, and instructional materials. Convention/Meeting: annual - always December. 1985 Dec. 4-6, Washington, DC.
[EA]

03696

NATIONAL ASSOCIATION OF RECYCLING INDUSTRIES (Waste) (NARI)

330 Madison Ave., New York, NY 10017
(212)867-7330
M. J. Mighdoll Exec.V.Pres.

Founded: 1913. Members: 1200. Staff: 20. Dealers, processors, and industrial consumers of recycled materials, scrap metals, wastepaper, textiles, and rubber. Publishes newsletters, booklets, and studies. Conducts regional and divisional meetings. Commodity Divisions: Foreign Trade; Metal Consumers; Metal Dealers; Paper Stock Consumers; Paper Stock Institute of America (see separate entry); Rubber Recycling; Textiles. Absorbed: (1977) Rubber Reclaimers Association, as the Rubber Recycling Division of NARI. Formerly: (1960) National Association of Waste Material Dealers; (1974) National Association of Secondary Material Industries. Convention/Meeting: annual.

[EA]

03295

NATIONAL ASSOCIATION OF SCIENTIFIC MATERIAL MANAGERS (Scientific Apparatus) (NAOSMM)

Chemistry Dept., University of New Orleans, New Orleans, LA 70148
(504)286-6324
Cecil M. Wells Treas.

Founded: 1974. Members: 357. Stockroom managers and supervisors of federal, state, university, and commercial research facilities who are involved in the purchase and supply of scientific chemicals and scientific apparatus; associate members are manufacturing companies and scientific supply companies. Seeks to: provide safer handling of chemicals and equipment involved in scientific research; encourage recycling; and provide information on safety and organization of storage areas. Holds seminars and workshops on safety, waste disposal, computerization of stock, and inventory control. Telecommunications Services: Information hot line for members concerning items other members wish to liquidate at little or no cost. Committees: Certification Program; Service Awards. Publications: Newsline, quarterly. Convention/Meeting: annual symposium - 1986 July, Boston, MA.

[EA]

03697

NATIONAL ASSOCIATION OF SOLVENT RECYCLERS (Waste) (NASR)

1333 New Hampshire Ave., N.W.,, Suite 1100, Washington, DC 20036
(202)463-6956
Faith Gavin Kuhn Exec.Dir.

Founded: 1980. Members: 100. Staff: 4. Firms engaged in recycling and reclamation of used industrial solvents. Seeks "responsible and intelligent" regulation by government and beneficial reuse of what would otherwise be wasted. Fosters energy conservation by using discarded materials for industrial fuels. Compiles statistics. Committees: Education; Environmental; Safety; Transportation. Publications: (1) Flashpoint (newsletter), biweekly; (2) Green Book of Solvent Recycling, annual. Convention/Meeting: semiannual conference - usually March and October.
[EA]

01375

NATIONAL FOOD AND CONSERVATION THROUGH SWINE (Feed) (FACTS)

c/o Ronnie Polen, R.R. 4, Box 397, Fox Run Rd., Sewell, NJ 08080
(609)468-5447
Ronnie Polen Exec. Officer

Founded: 1970. Members: 500. Food waste collectors and feeders of swine. Organization claims the industry is the oldest anti-pollutant and conservationist industry in the U.S., since more than six million tons of food waste are recycled annually through hogs "into a useful product without pollution, without incineration, sewaging or landfill." Publications: Newsletter, quarterly. Convention/Meeting: annual.
[EA]

03699
NATIONAL RECYCLING COALITION (Waste) (NRC)
45 Rockefeller Plaza, Rm. 2350, New York, NY 10111
Gary Liss Pres.

Founded: 1978. Members: 700. Individuals (350) and environmental, labor, and business organizations (350) united to encourage the recovery, reuse, and conservation of materials and energy, and to make the benefits of recycling more widely known. Seeks to help change national policies on energy, waste management, taxes, and transportation which hinder recycling efforts. Informs consumers of the fact that recycled products are not inherently inferior to products made with virgin materials. Encourages manufacturers to invest in the equipment required to make recycled products, and to make more of such products available at reasonable prices. Advocates recycling and resource conservation. Answers requests for information; operates speakers bureau; bestows awards. Maintains small research library. Committees: Publications; Technology and Market Development. Absorbed: (1981) Association for a National Recycling Policy (founded 1980 and formerly Committee for a National Recycling Policy). Convention/Meeting: annual congress - 1985 October, Columbus, OH.
[EA]

03702
RECLAIM MANAGERS ASSOCIATION (Waste) (RMA)
Delivery Station 68-000, Tektronix, Inc., Beaverton, OR 97077
(503)627-8345
Mark Michelson Pres.

Founded: 1981. Members: 85. Managers of electronic and other companies who are responsible for waste recycling and material salvage. Promotes the recovery of resuable resources generated by member companies. Reusable resources or by-products include machinery, inventories, metals, and precious metals. Sponsors bimonthly seminars and workshops.
[EA]

05790
RECYCLING LEGISLATION ACTION COALITION (Environmental Quality) (RLAC)
c/o Richard D. Wimberly, 177 Winthrop Rd., Apt. 1, Brookline, MA 02416
(617)232-9038
Richard D. Wimberly Exec.Dir.

Founded: 1969. Statewide network of groups and individuals united to research, draft and lobby for legislation to promote and enforce recycling of solid materials. Seeks to help participants coordinate activities, information, funding and volunteers, and to aid groups pursuing environmental legislation projects of their own. Publishes newsletter.
[EA]

03703
SECONDARY LEAD SMELTERS ASSOCIATION (Waste) (SLSA)
P.O. Box 1124, Tampa, FL 33601
(813)248-3161
David W. Morris Sec.

Founded: 1976. Members: 23. Staff: 1. Recyclers of lead, oxide manufacturers, industry equipment suppliers, and consulting companies. Objectives are: to provide information services relative to safety and environmental controls; to conduct continuing industrywide studies. Offers safety and health program recommendations to eliminate hazards to the health and safety of employees. Conducts research in: engineering and administrative controls; respiratory protection; environmental and biological monitoring. Compiles statistics on industrywide problems. Publications: (1) Newsletter, bimonthly; (2) Meeting Minutes, 3/year. Convention/Meeting: 3/year.
[EA]

02772
SOLID WASTE COUNCIL OF THE PAPER INDUSTRY (SWCPI)
1619 Massachusetts Ave., N.W., Washington, DC 20036
(202)797-5786
Richard J. Wiechmann Exec.Dir.

Founded: 1971. Members: 7. Staff: 2. Associations in the paper and wood products industry. Goal is to determine ways of lessening the impact of paper products on the nation's solid waste industry; promotes recycling. Conducts seminars and studies. Testifies before legislative bodies. Publications: Studies and Digests of Studies, irregular. Convention/Meeting: annual - always March, New York City, in conjunction with the American Paper Institute.
[EA]

01101
TEXTILE BAG AND PACKAGING ASSOCIATION (Container) (TBPA)
1655 W. Fullerton Ave., Chicago, IL 60614
(312)281-3660
Sheldon Simon Sec.-Treas.

Founded: 1933. Members: 175. Staff: 1. Manufacturers and recyclers of reclaimed and processed burlap, polypropylene, and cotton bags. Publications: Directory, annual. Formerly: (1968) National Burlap Bag Dealers Association; (1984) Textile Bag Processors Association. Convention/Meeting: annual - 1986 Mar. 2-9, Los Angeles, CA; 1987 Ft. Lauderdale, FL. Also holds spring and fall executive meeting - 1985 (next) Oct. 17-18, Toronto, ON, Canada.
[EA]

05611
THORNE ECOLOGICAL INSTITUTE (Ecology) (TEI)
4860 Riverbend Rd., Boulder, CO 80301
(303)443-7325
Carl Norbeck Pres.

Founded: 1954. Staff: 6. "Is dedicated to the application of ecological principles, to the stewardship of natural resources, and the enhancement of the human environment." Conducts seminars on ecology bringing together adults with diverse professions and interests. Offers environmental services to industry and government agencies on environmental assessments, wildlife management, and reclamation. Publications: Update, quarterly; also publishes technical papers on ecological research. Formerly: (1971) Thorne Ecological Foundation. Convention/Meeting: annual - always May.
[EA]

13349
WASHINGTON CITIZENS FOR RECYCLING (Environment) (WCFR)
4224 University Way, N.E., Seattle, WA 98105
(206)633-3366
Sarah Chandler Exec.Dir.

Founded: 1977. Members: 2500. Coalition of consumer, farmer, environmental and sportsmen groups. Objective is to work for increased recycling and waste reduction through state legislation and community education. Conducts research programs; maintains speakers bureau and library of materials on deposit legislation, solid and toxic waste, and recycling. Committees: Education; Issues; Outreach. Publications: Newsletter, 7/year; also publishes status sheets and fact sheets. Formerly: (1980) Citizens for Returnable Beverage Containers. Supersedes: Beverage Container Control Coalition (founded 1975).
[EA]

IV. APPENDIX D - Waste Exchanges

(Taken from EPA's " Waste Minimization; Issues and Options" v.1; Oct. 1986)

Organization/Address/Telephone	Contact Person
Information Exchanges:	
California Waste Exchange Department of Health Services Toxic Substances Control Division 714 P Street Sacramento, California 95814 (916) 324-1818	Robert McCormick
Canadian Waste Materials Exchange Ontario Research Foundation Sheridan Park Research Community Mississauga, Ontario CANADA L5K 183 (416) 822-4111	Robert Laughlin,PhD
Chemical Recycle Information Program Houston Chamber of Commerce 1110 Milam Building,25th Floor Houston, Texas 77002 (713) 658-2462	Jack Westney
Georgia Waste Exchange Business Council of Georgia P.O. Box 7178, Station A Marietta, Gerogia 30065 (404) 448-0242	Clinton Hammond
Great Lakes Regional Waste Exchange 3250 Townsend NE Grand Rapids, Michigan 49505 (616) 451-8992	William Stough
Industrial Materials Exchange Service 2200 Churchhill Road, #24 Springfield, Illinois 62706 (217) 523-8700	Margo Siekerka
Industrial Waste Information Exchnage New Jersey Chamber of Commerce 5 Commerce Street Newark, New Jersey 07102 (201) 623-7070	William E. Payne

Inter-Mountain Waste Exchange HATCHCO-W.S. Hatch Co. 643 South 800 west Woods Cross, Utah 84087 (801) 295-5511	Joe Parkinson
Midwest Industrial Waste Exchange Ten Broadway St. Louis, Missouri 63102 (314) 231-5555	Clyde H. Wiseman
Montana Industrial Waste Exchange P.O.Box 1730 Helena, Montana 59624 (406) 442-2405	Janelle Fallon
Northeast Industrial Waste Exchange 90 Presidential Plaza Suite 122 Syracuse, New York 13202 (315) 422-6572	Lewis Cutler
Piedmont Waste Exchange Urban Institute UNCC Station Charlotte, North Carolina 28223 (704) 597-2307	Mary McDaniel
Southern Waste Information Exchange Post Office Box 6487 Florida State University Institute of Science & Public Affairs Tallahassee, Florida 32313 (904) 644-5516	Gene Jones
Tennessee Waste Exchange Tennessee Manufacturing Association. 501 Union Building, Suite 601 Nashville, Tennessee 37219 (615) 256-5141	Sharon Bell

Western Waste Exchange ASU Center for Environmental Studies Krause Hall Tempe, Arizona 85287 (602) 965-2975	Nicholas Hild, PhD
Organization/Address/Telephone	Contact Person
Materials Exchanges:	
Alkem, Inc. 25 Glendale Road Summit, New Jersey 70901 (201) 277-0060	Alan W. Schneider
American Chemical Exchange (ACE) 4849 Golf Road Skokie, Illinois 60077 (312) 677-2800	Tom Hurvis
Enkarn Research Corporation Industrial Commodities Bulletin P.O. Box 590 Albany, New York 12201 (518) 436-9684	J.T. Engster
Environmental Clearinghouse Org. (ECHO) 3426 Maple Lane Hazel Crest, Illinois 60429 (312) 335-0754	William Petrich
ICM-Chemical Corporation 20 Cordova Street, Suite #3 St. Augustine, Florida 32084 (904) 824-7247	Anthony L. Tripi
New England Materials Exchange 34 N. Main Street Farmington, New Hampshire 03825 (603) 755-9962 or 755-4442	David Green
Ore Corporation, The Ohio Resource Exchange 2415 Woodmere Drive Cleveland, Ohio 44106 (216) 371-4869	Richard L. Immerman

Peck Environmental Laboratory, Inc. P.O. Box 947 Kennebunk, Maine 04047 (207) 985-6116	Donna Trask
TECHRAD Industrial Waste Exchange 4619 N. Santa Fe Oklahoma City, Oklahoma 73118 (405) 528-7016	Ernest L. Koerner
Union Carbide Corporation (In-house operation only)	
Zero Waste Systems, Inc. 2928 Poplar Street Oakland, California 94608 (415) 893-8257 or (415) 893-8261	Trevor Pitts

RECYCLING PERIODICALS

0008430 (UI; ST)

Abwassertechnik-Abfalltechnik und Recycling

Former titles: Abwassertechnik mit Abfalltechnik: ISSN 0342-4022: Abwassertechnik

Eds. S. Schwarz, Edgar Gross
Publisher: Bauverlag GmbH
Postfach 1460, 6200 Wiesbaden, W. Germany (B.R.D.)
Status: Active 1949
Frequency: 6 per yr. Circ. 5,000 Price: DM.114
Germany,West BRD (GW)
Dewey Decimal No.: 628.168
Special Features: Advertising. Book Reviews
Abstracting and Indexing Services: Chem.Abstr.; Excerp.Med.
Copies provided for fee (C$); No free copying (NC); No free use of abstracts to abstracting services (NCA)
Subject Headings: ENVIRONMENTAL STUDIES (00000139); WATER RESOURCES (00002756)
[ULR]

0028431 (UI; ST)

BioCycle; journal of waste recycling

Former titles: Compost Science/Land Utilization: ISSN 0160-7413: Compost Science: ISSN 0010-4388

Ed. Jerome Goldstein
Publisher: J G Press, Inc.
Box 351, Emmaus, PA 18049, Tel. 215-967-4135
Status: Active 1960
Frequency: m. (except Jun. & Dec.) Circ. 8,000 Price: US.$43
United States (US)
ISSN: 0276-5055
Dewey Decimal No.: 628.44
back issues avail.
Special Features: charts. illus. index. Advertising. Book Reviews
Abstracting and Indexing Services: Biol.Abstr.; Chem.Abstr.; Curr.Cont.; Eng.Ind.; Excerp.Med.; Met.Abstr.; Ocean.Abstr.; Pollut.Abstr.; Gas Abstr.; Geo.Abstr.; Hort.Abstr.; Soils & Fert.
Copies provided for fee (C$); Registered Copyright ClearanceCenter (ccc); Free use of abstracts to abstracting services (FCA); No free copying (NC)
Subject Headings: ENVIRONMENTAL STUDIES (00000139)
[ULR]

0070917 (UI; ST)
N K K News; steelmaking engineering & construction shipbuilding
Formerly: Japan Steel News
Ed. Shuichi Sano
Publisher: Nippon Kokan KK
1-1-2 Marunouchi, Chiyoda-Ku, Tokyo 100, Japan
Status: Active 1961
Frequency: Monthly Circ. 6,500 Price: free
Japan (JA)
Dewey Decimal No.: 621; 387
Text in English
Abstracting and Indexing Services: Met.Abstr.; World Alum.Abstr.

Free copying permitted (FC); Free use of abstracts to abstracting services (FCA); Photocopies not provided (N$)

Subject Headings: ENGINEERING-MECHANICAL ENGINEERING (00001132); TRANSPORTATION-SHIPS AND SHIPPING (00002707)

0050463 (UI; ST; LB)
Conservation & Recycling
Eds. Michael B. Bever, Michael E. Henstock
Publisher: Pergamon Press, Inc.; Journals Division
Maxwell House, Fairview Park, Elmsford, NY 10523, And: Headington Hill Hall, Oxford OX3 OBW, England, Tel. 914-592-7700
Status: Active 1976
Frequency: q Circ. 1,035 Price: US.$175
United States (US)
ISSN: 0361-3658
Dewey Decimal No.: 333
Special Features: abstr. illus. stat. index. Advertising. Book Reviews

Abstracting and Indexing Services: Biol.Abstr.; Chem.Abstr.; Curr.Cont.; Excerp.Med.; Met.Abstr.; Pollut.Abstr.; Geo.Abstr.; Int.Packag.Abstr.; Paper & Bd.Abstr.; World Alum.Abstr.

Copies provided for fee (C$); Registered Copyright ClearanceCenter (ccc); Free use of abstracts to abstracting services (FCA); No free copying (NC)

Subject Headings: CONSERVATION (00000863); ENVIRONMENTAL STUDIES (00000139)
[ULR]

0017257 (UI)
Magazine Recycling; vakblad voor de herwinning (recuperatie) van grondstoffen
Formerly: Recuperatie: ISSN 0034-1916
Ed.Bd
Publisher: Recycling Press B.V.
Ruychrocklaan 202, 2597 EC The Hague, Netherlands
Status: Active 1967
Frequency: Bimonthly Circ. 1,750 Price: f1.50
Netherlands (NE)
Dewey Decimal No.: 338
Special Features: charts. illus. stat. Advertising. Book Reviews
Copies provided for fee (C$); Free use of abstracts to abstracting services (FCA); No free copying (NC)
Subject Headings: BUSINESS AND ECONOMICS-PRODUCTION OF GOODS AND SERVICES (00003852)
[ULR]

0023666 (UI; ST)
Materials Reclamation Weekly
Formerly: Waste Trade World and Iron and Steel Scrap Review
Ed. Pat Stirling
Publisher: Maclaren Publishers Ltd.
19 Scarbrook Rd., Croydon, Surrey CR9 1QH, England
Status: Active 1912
Frequency: Weekly Circ. 5,234 Price: E44 (US.$64)
United Kingdom (UK)
ISSN: 0025-5386
Dewey Decimal No.: 669; 628.44
Special Features: charts. illus. mkt. tr.lit. Advertising. Book Reviews
Abstracting and Indexing Services: Excerp.Med.; Int.Packag.Abstr.; Key to Econ.Sci.; Paper & Bd.Abstr.
Copies provided for fee (C$); Free use of abstracts to abstracting services (FCA); No free copying (NC)
Subject Headings: METALLURGY (00001995); ENVIRONMENTAL STUDIES (00000139)
[ULR]

0114945 (IR)
New York State Environmental Facilities Corporation. Industrial Materials Recycling Act. Annual Report
Ed.Bd.
Publisher: New York State Environmental Facilities Corporation
50 Wolf Rd., Albany, NY 12205
Status: Active 1982
Frequency: a Circ. 2,000 Price: Free
United States (US)
Dewey Decimal No.: 614.7
Free copying permitted (FC); Copies provided for fee (C$); Free use of abstracts to abstracting services (FCA)
Subject Headings: ENVIRONMENTAL STUDIES (00000139)
[ULR]

0007381 (UI)
Recuperation; recyclage
Publisher: Publications A. Patin
41 rue d'Auteuil, 75016 Paris, France
Status: Active 1909
Frequency: Weekly Circ. 3,800 Price: 550 F.
France (FR)
ISSN: 0034-1924
Dewey Decimal No.: 338; 658
Special Features: mkt. Advertising
Subject Headings: BUSINESS AND ECONOMICS-MANAGEMENT (00001739)
[ULR]

0068086 (UI)
Recycling News
Publisher: National Recycling Coalition
45 Rockeveller Plaza, Rm. 2350, New York, NY 10111, Tel. 212-729-8866
Status: Ceased 1980-19??; discontinued
Frequency: q Circ. 10,000 Price: membership
United States (US)
ISSN: 0276-7473
Dewey Decimal No.: 614.7
Copies provided for fee (C$); Free use of abstracts to abstracting services (FCA); No free copying (NC)
Subject Headings: ENVIRONMENTAL STUDIES (00000139)
[ULR]

0040039 (UI)
Recycling
Formerly: Schrottbetrieb
Ed. Rolf Willeke
Sponsor: Bundesverband der Deutschen Schrottwirtschaft; Publisher: Handelsblatt GmbH
Kasernenstr. 67, Postfach 1102, 4000 Duesseldorf 1, W. Germany (B.R.D.)
Status: Active vol. 26, 1975
Frequency: m Circ. 1,000 Price: DM.20
Germany,West BRD (GW)
Dewey Decimal No.: 621.9
reprint service avail. from UMI
Special Features: charts. illus. stat. tr.lit. Advertising
Abstracting and Indexing Services: C.I.S. Abstr.; Key to Econ.Sci.
Copies provided for fee (C$)
Subject Headings: ETHNIC INTERESTS (00003621)
[ULR]

0108084 (UI; ST)
Recycling Roundups
Publisher: Department of Energy and Environmental Protection; Office of Recycling; New Jersey
101 Commerce St., Rm. 204, Newark, NJ 07102, Tel. 201-648-3290
Status: Active
Price: free
United States (US)
Dewey Decimal No.: 614.7; 333.7
Free copying permitted (FC); Photocopies not provided (N$)
Subject Headings: ENVIRONMENTAL STUDIES (00000139); CONSERVATION (00000863)
[ULR]

0035959 (UI; ST)
Recycling Today
Formerly: Secondary Raw Materials: ISSN 0037-0584
Ed. Anthony J. Abitante
Publisher: Market News Publishing Corporation
156 Fifth Ave., New York, NY 10010
Status: Active 1963
Frequency: m Price: US.$19
United States (US)
Dewey Decimal No.: 669
Special Features: charts. illus. mkt. stat. Advertising
Abstracting and Indexing Services: Met.Abstr.; World Alum.Abstr.
Copies provided for fee (C$); No free copying (NC); No free use of abstracts to abstracting services (NCA)
Subject Headings: METALLURGY (00001995)
[ULR]

0115411 (UI; ST)
Recycling Update
Ed. A.C. Doyle
Publisher: Update Publicare Co.; Subsidiary of: A. C. Doyle Publishing, Inc.
Box 570122, Houston, TX 77257
Status: Active 1983
Frequency: Semiannual Circ. 2,000 Looseleaf Price: US.$4
United States (US)
ISSN: 0736-1890
Dewey Decimal No.: 614.7
back issues avail.
Special Features: bibl. Advertising
Subject Headings: ENVIRONMENTAL STUDIES (00000139)
[ULR]

0035510 (UI; ST)
Reuse/Recycle
Ed. M.A. Kohudic
Publisher: Technomic Publishing Co. Inc.
851 New Holland Ave., Box 3535, Lancaster, PA 17604, Tel. 717-291-5609
Status: Active 1971
Frequency: m Circ. 300 Price: US.$85
United States (US)
ISSN: 0048-7457
Dewey Decimal No.: 628.5
looseleaf Format
Special Features: charts. illus. Advertising. Book Reviews
Free use of abstracts to abstracting services (FCA); No free copying (NC)
Photocopies not provided (N$)
Subject Headings: ENVIRONMENTAL STUDIES (00000139)
[ULR]

0114635 (UI; ST)
Resource Recycling; North America's recycling journal
Ed. Jerry Powell
Publisher: Resource Recycling, Inc.
1615 N.W. 23 St., Ste. 1, Box 10540, Portland, OR 97210, Tel. 503-227-1319
Status: Active 1982
Frequency: Bimonthly Circ. 2,500 Price: US.$18
United States (US)
ISSN: 0744-4710
Dewey Decimal No.: 614.7; 639.9
back issues avail.; reprint service avail.
Special Features: charts. illus. stat. index. Advertising. Book Reviews
Abstracting and Indexing Services: P.A.I.S.; Environ.Abstr.; Environ.Per.Bibl.
Copies provided for fee (C$); Free use of abstracts to abstracting services (FCA); No free copying (NC)
Subject Headings: ENVIRONMENTAL STUDIES (00000139); CONSERVATION (00000863)
[ULR]

0042618 (UI; ST)
Steel Can Recycling Newsletter
Formerly: Steel Can Recycling
Ed. Tom Willson
Publisher: American Iron and Steel Institute; Committee of Tin Mill Products Producers
1000 16th St., N.W., Washington, DC 20036, Tel. 202-452-7700
Status: Active 1972
Frequency: 4 per yr Circ. 13,000 Price: free
United States (US)
Dewey Decimal No.: 628
Special Features: illus
Free copying permitted (FC); Free use of abstracts to abstracting services (FCA); Photocopies not provided (N$)
Subject Headings: ENVIRONMENTAL STUDIES (00000139)
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0115180 (UI)
Update; Waste Disposal, Recycling, Resource Recovery
Publisher: Department of Sanitation; New York (City)
51 Chambers St., New York, NY 10007
Status: Active
Frequency: m
United States (US)
Dewey Decimal No.: 628
Subject Headings: PUBLIC HEALTH AND SAFETY (00001351)
[ULR]

0135514 (UI; ST)
Waste Minimization & Recycling Report; hazardous & solid waste
Ed. Martin L. Hearner
Publisher: Government Institutes, Inc.
966 Hungerford Dr., No. 24, Rockville, MD 20850, Tel. 301-251-9250
Status: Active 1986
Frequency: m Price: US.$192
United States (US)
ISSN: 0890-5509
Dewey Decimal No.: 660; 620.11; 614.7
back issues avail.
Special Features: index
Copies provided for fee (C$); No free copying (NC); No free use of abstracts to abstracting services (NCA)
Subject Headings: ENGINEERING-CHEMICAL ENGINEERING (00001090); ENGINEERING-ENGINEERING MECHANICS AND MATERIALS (00001119); ENVIRONMENTAL STUDIES (00000139); LAW (00001636)
[ULR]

0061917 (UI; ST)

Waste Recovery Report; recycling and reprocessing of resources

Formerly (until 1985): Recovery Engineering News
Ed. Alan Krigman
Publisher: I C O N Information Concepts, Inc.
211 S. 45th St., Philadelphia, PA 19104, Tel. 215-349-6500
Status: Active 1976
Frequency: m Circ. 450 Price: US.$40
United States (US)
Dewey Decimal No.: 620
Special Features: Book Reviews
Free copying permitted (FC); Free use of abstracts to abstracting services (FCA)
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